

0063283

SAF-B03-018
ERDF Groundwater Well Samples
FINAL DATA PACKAGE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Tom Lazarski H9-03

BL 11/16
INITIAL/DATE

Rich Weiss H9-01

BL
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG H2724 SAF-B03-018

Rad only Chem only X Rad & Chem

X Complete Partial

RECEIVED
DEC 14 2004
EDMC



EBERLINE

SERVICES



November 12, 2004

Ms. Joan Kessner
Bechtel Hanford Inc.
3190 George Washington Way
MSIN H9-02
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R4-09-124-7094, SDG H2724

Dear Ms. Kessner:

Enclosed is the data report for six water samples designated under SAF No. B03-018 received at Eberline Services on September 16, 2004. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/mbf

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H2724 was composed of six water samples designated under SAF No. B03-018 with a Project Designation of: ERDF Sept 2004.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-mail on November 12, 2004. The electronic data deliverable (EDD) was transmitted to BHI via e-mail on November 15, 2004.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analyses

No problems were encountered during the course of the analyses.

2.2 Total Radium Analyses

No problems were encountered during the course of the analyses.

2.3 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.5 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

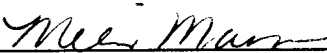
2.6 Total Uranium Analyses

There was contamination in the method blank (0.015 µg/L). The activity was less than 2-times the RDL (0.1 µg/L) for total uranium.


No other problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



Melissa C. Mannion
Senior Program Manager



Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2724

S U M M A R Y D A T A S E C T I O N

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Mel Mann
Prepared by

Mel Mann
Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2724

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2724

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2724

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R409124-01	B1B3V0	Hanford Site	WATER		B03-018	B03-018-2	09/15/04 11:02
R409124-02	B1B3V2	Hanford Site	WATER		B03-018	B03-018-3	09/15/04 11:02
R409124-03	B1B3V4	Hanford Site	WATER		B03-018	B03-018-4	09/15/04 09:14
R409124-04	B1B3V6	Hanford Site	WATER		B03-018	B03-018-5	09/15/04 08:00
R409124-05	B1B3T6	Hanford Site	WATER		B03-018	B03-018-6	09/15/04 10:44
R409124-06	B1B3T8	Hanford Site	WATER		B03-018	B03-018-1	09/16/04 08:33
R409124-07	Lab Control Sample		WATER		B03-018		
R409124-08	Method Blank		WATER		B03-018		
R409124-09	Duplicate (R409124-01)	Hanford Site	WATER		B03-018		09/15/04 11:02
R409124-10	Spike (R409124-02)	Hanford Site	WATER		B03-018		09/15/04 11:02

LAB SUMMARY

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LS

Version 3.06

Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2724

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7094	B03-018-1	B1B3T8	WATER		10.9 L		09/17/04	1	R409124-06	7094-006
	B03-018-2	B1B3V0	WATER		10.5 L		09/16/04	1	R409124-01	7094-001
	B03-018-3	B1B3V2	WATER		10.5 L		09/16/04	1	R409124-02	7094-002
	B03-018-4	B1B3V4	WATER		10.9 L		09/16/04	1	R409124-03	7094-003
	B03-018-5	B1B3V6	WATER		10.9 L		09/16/04	1	R409124-04	7094-004
	B03-018-6	B1B3T6	WATER		10.9 L		09/16/04	1	R409124-05	7094-005
		Method Blank	WATER						R409124-08	7094-008
		Lab Control Sample	WATER						R409124-07	7094-007
		Duplicate (R409124-01)	WATER		10.5 L		09/16/04	1	R409124-09	7094-009
		Spike (R409124-02)	WATER		10.5 L		09/16/04	1	R409124-10	7094-010

QC SUMMARY

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2724

TEST	MATRIX	METHOD	PREPARATION ERROR				PLANCHETS ANALYZED			QUALI-		
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	FIERS
Beta Counting												
TC	WATER	Technetium 99 in Water	7095-194	10.0	6			1	1	1/1		
Gas Proportional Counting												
RAT	WATER	Total Alpha Radium in Water	7095-194	5.0	6			1	1	1/1		
Gas Proportional Counting												
93A	WATER	Gross Alpha in Water	7095-194	20.0	6			1	1	1/1		
93B	WATER	Gross Beta in Water	7095-194	15.0	6			1	1	1/1		
Gamma Spectroscopy												
I	WATER	Iodine 129 in Water	7095-194	5.0	6			1	1	1/1		
Kinetic Phosphorimetry (KPA)												
U_T	WATER	Uranium, Total in Water	7095-194	9.0	6			1	1	1/1		
Liquid Scintillation Counting												
C	WATER	Carbon 14 in Water	7095-194	10.0	6			1	1	1/1	1/1	X

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

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SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2724

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R409124-01	B1B3V0			7094-001	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-001	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04	B03-018-2	B03-018		7094-001	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-001	I		10/25/04	11/08/04	MWT	Iodine 129 in Water
				7094-001	RAT		10/26/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-001	TC		10/25/04	11/08/04	MWT	Technetium 99 in Water
				7094-001	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-02	B1B3V2			7094-002	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-002	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04	B03-018-3	B03-018		7094-002	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-002	I		10/25/04	11/08/04	MWT	Iodine 129 in Water
				7094-002	RAT		10/26/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-002	TC		10/27/04	11/08/04	MWT	Technetium 99 in Water
				7094-002	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-03	B1B3V4			7094-003	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-003	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04	B03-018-4	B03-018		7094-003	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-003	I		10/26/04	11/08/04	MWT	Iodine 129 in Water
				7094-003	RAT		10/29/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-003	TC		10/26/04	11/08/04	MWT	Technetium 99 in Water
				7094-003	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-04	B1B3V6			7094-004	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-004	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04	B03-018-5	B03-018		7094-004	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-004	I		10/26/04	11/08/04	MWT	Iodine 129 in Water
				7094-004	RAT		10/29/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-004	TC		10/26/04	11/08/04	MWT	Technetium 99 in Water
				7094-004	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-05	B1B3T6			7094-005	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-005	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04	B03-018-6	B03-018		7094-005	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-005	I		10/27/04	11/08/04	MWT	Iodine 129 in Water
				7094-005	RAT		10/30/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-005	TC		10/27/04	11/08/04	MWT	Technetium 99 in Water
				7094-005	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water

WORK SUMMARY

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2724

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R409124-06	B1B3T8			7094-006	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/16/04	Hanford Site		WATER	7094-006	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/17/04	B03-018-1	B03-018		7094-006	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-006	I		10/27/04	11/08/04	MWT	Iodine 129 in Water
				7094-006	RAT		10/26/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-006	TC		10/27/04	11/08/04	MWT	Technetium 99 in Water
				7094-006	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-07	Lab Control Sample			7094-007	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
			WATER	7094-007	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
		B03-018		7094-007	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-007	I		10/27/04	11/08/04	MWT	Iodine 129 in Water
				7094-007	RAT		10/26/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-007	TC		10/25/04	11/08/04	MWT	Technetium 99 in Water
				7094-007	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-08	Method Blank			7094-008	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
			WATER	7094-008	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
		B03-018		7094-008	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-008	I		10/27/04	11/08/04	MWT	Iodine 129 in Water
				7094-008	RAT		10/30/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-008	TC		10/26/04	11/08/04	MWT	Technetium 99 in Water
				7094-008	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-09	Duplicate (R409124-01)			7094-009	93A/93		10/14/04	11/08/04	MWT	Gross Alpha in Water
09/15/04	Hanford Site		WATER	7094-009	93B/93		10/14/04	11/08/04	MWT	Gross Beta in Water
09/16/04		B03-018		7094-009	C		11/02/04	11/08/04	MWT	Carbon 14 in Water
				7094-009	I		10/27/04	11/08/04	MWT	Iodine 129 in Water
				7094-009	RAT		10/27/04	11/08/04	MWT	Total Alpha Radium in Water
				7094-009	TC		10/27/04	11/08/04	MWT	Technetium 99 in Water
				7094-009	U_T		10/12/04	11/08/04	MWT	Uranium, Total in Water
R409124-10	Spike (R409124-02)			7094-010	C		11/03/04	11/08/04	MWT	Carbon 14 in Water
09/15/04	Hanford Site		WATER							
09/16/04		B03-018								

WORK SUMMARY

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2724

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
93A/93	B03-018	Gross Alpha in Water	900.0_ALPHABETA_GPC	6			1	1	1		9
93B/93	B03-018	Gross Beta in Water	900.0_ALPHABETA_GPC	6			1	1	1		9
C	B03-018	Carbon 14 in Water	C14_CHEM_LSC	6			1	1	1	1	10
I	B03-018	Iodine 129 in Water	I129_SEP_LEPS_GS	6			1	1	1		9
RAT	B03-018	Total Alpha Radium in Water	RATOT_GPC	6			1	1	1		9
TC	B03-018	Technetium 99 in Water	TC99_TR_SEP_LSC	6			1	1	1		9
U_T	B03-018	Uranium, Total in Water	UTOT_KPA	6			1	1	1		9
TOTALS				42			7	7	7	1	64

WORK SUMMARY

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

7094-008

Method Blank

METHOD BLANK

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R409124-08</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7094-008</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>B03-018</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-0.127	0.43	0.94	3.0	U	93A
Gross Beta	12587-47-2	-0.174	1.2	2.0	4.0	U	93B
Carbon 14	14762-75-5	<u>-20.5</u>	20	34	200	U	C
Technetium 99	14133-76-7	1.74	2.0	4.8	15	U	TC
Total Uranium (ug/L)	7440-61-1	<u>0.015</u>	0.007	0.014	0.10		U_T
Total Radium	ALPHA-RA	0.041	0.10	0.36	1.0	U	RAT
Iodine 129	15046-84-1	-0.260	1.5	3.3	5.0	U	I

ERDF Sept. 2004

QC-BLANK #49137

METHOD BLANKS

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Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/12/04</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

7094-007

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7094</u>	Client/Case no <u>Hanford</u> SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>
Lab sample id <u>R409124-07</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>7094-007</u>	Material/Matrix <u>WATER</u>
	SAF No <u>B03-018</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	70.7	5.3	0.83	3.0		93A	71.3	2.9	99	68-132	70-130
Gross Beta	74.4	3.6	1.8	4.0		93B	74.7	3.0	100	76-124	80-120
Carbon 14	9010	110	34	200		C	9570	380	94	85-115	80-120
Technetium 99	1240	35	8.3	15		TC	1200	48	103	83-117	80-120
Total Uranium (ug/L)	100	11	0.14	0.10		U_T	90.5	3.6	110	76-124	80-120
Total Radium	60.3	2.4	0.48	1.0		RAT	61.5	2.5	98	89-111	80-120
Iodine 129	517	12	17	5.0		I	508	20	102	90-110	80-120

ERDF Sept. 2004

QC-LCS #49136

LAB CONTROL SAMPLES

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Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>11/12/04</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

7094-009

B1B3V0

DUPLICATE

SDG <u>7094</u> Contact <u>Melissa C. Mannion</u> DUPLICATE Lab sample id <u>R409124-09</u> Dept sample id <u>7094-009</u>	ORIGINAL Lab sample id <u>R409124-01</u> Dept sample id <u>7094-001</u> Received <u>09/16/04</u>	Client/Case no <u>Hanford</u> SDG <u>H2724</u> Contract <u>No. 630</u> Client sample id <u>B1B3V0</u> Location/Matrix <u>Hanford Site</u> <u>WATER</u> Collected/Volume <u>09/15/04 11:02</u> <u>10.5 L</u> Custody/SAF No <u>B03-018-2</u> <u>B03-018</u>
--	---	---

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Gross Alpha	0.318	0.97	1.2	3.0	U	93A	-0.173	0.79	1.1	U	-		
Gross Beta	36.9	2.6	1.9	4.0		93B	34.3	2.8	1.8		7	36	
Carbon 14	5.93	21	35	200	U	C	6.99	21	36	U	-		
Technetium 99	65.6	4.0	4.2	15		TC	63.5	4.7	5.3		3	26	
Total Uranium (ug/L)	2.17	0.23	0.014	0.10	B	U_T	2.38	0.26	0.014	B	9	30	
Total Radium	-0.033	0.10	0.46	1.0	U	RAT	-0.128	0.098	0.48	U	-		
Iodine 129	12.8	2.4	5.0	5.0		I	13.3	1.8	3.7		4	36	

ERDF Sept. 2004

QC-DUP#1 49138

DUPLICATES

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Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>11/12/04</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

7094-010

B1B3V2

MATRIX SPIKE

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
MATRIX SPIKE	ORIGINAL	
Lab sample id <u>R409124-10</u>	Lab sample id <u>R409124-02</u>	Client sample id <u>B1B3V2</u>
Dept sample id <u>7094-010</u>	Dept sample id <u>7094-002</u>	Location/Matrix <u>Hanford Site</u> <u>WATER</u>
	Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 11:02</u> <u>10.5 L</u>
		Custody/SAF No <u>B03-018-3</u> <u>B03-018</u>

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS LIMITS	PROTOCOL
Carbon 14	26600	270	63	200	X C	28700	1100	0	21	93	85-115	60-140

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QC-MS#2 49139

MATRIX SPIKES

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Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>11/12/04</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

7094-001

B1B3V0

D A T A S H E E T

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R409124-01</u>	Client sample id <u>B1B3V0</u>	
Dept sample id <u>7094-001</u>	Location/Matrix <u>Hanford Site</u>	<u>WATER</u>
Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 11:02</u>	<u>10.5 L</u>
	Custody/SAF No <u>B03-018-2</u>	<u>B03-018</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-0.173	0.79	1.1	3.0	U	93A
Gross Beta	12587-47-2	34.3	2.8	1.8	4.0		93B
Carbon 14	14762-75-5	6.99	21	36	200	U	C
Technetium 99	14133-76-7	63.5	4.7	5.3	15		TC
Total Uranium (ug/L)	7440-61-1	2.38	0.26	0.014	0.10	B	U_T
Total Radium	ALPHA-RA	-0.128	0.098	0.48	1.0	U	RAT
Iodine 129	15046-84-1	13.3	1.8	3.7	5.0		I

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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Report date <u>11/12/04</u>

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

7094-002

B1B3V2

D A T A S H E E T

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R409124-02</u>	Client sample id <u>B1B3V2</u>	
Dept sample id <u>7094-002</u>	Location/Matrix <u>Hanford Site</u>	<u>WATER</u>
Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 11:02</u>	<u>10.5 L</u>
	Custody/SAF No <u>B03-018-3</u>	<u>B03-018</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-0.435	0.77	1.3	3.0	U	93A
Gross Beta	12587-47-2	34.1	2.5	2.0	4.0		93B
Carbon 14	14762-75-5	0	21	35	200	U	C
Technetium 99	14133-76-7	60.6	4.8	6.1	15		TC
Total Uranium (ug/L)	7440-61-1	2.15	0.23	0.014	0.10	B	U_T
Total Radium	ALPHA-RA	-0.050	0.16	0.46	1.0	U	RAT
Iodine 129	15046-84-1	13.6	1.6	3.2	5.0		I

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Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

7094-003

B1B3V4

D A T A S H E E T

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R409124-03</u>	Client sample id <u>B1B3V4</u>	
Dept sample id <u>7094-003</u>	Location/Matrix <u>Hanford Site</u>	<u>WATER</u>
Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 09:14</u>	<u>10.9 L</u>
	Custody/SAF No <u>B03-018-4</u>	<u>B03-018</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.487	1.1	1.4	3.0	U	93A
Gross Beta	12587-47-2	33.8	2.6	2.2	4.0		93B
Carbon 14	14762-75-5	1.22	20	34	200	U	C
Technetium 99	14133-76-7	56.5	5.3	7.4	15		TC
Total Uranium (ug/L)	7440-61-1	2.95	0.32	0.014	0.10	B	U_T
Total Radium	ALPHA-RA	<u>-0.083</u>	0.079	0.42	1.0	U	RAT
Iodine 129	15046-84-1	6.53	2.4	<u>5.1</u>	5.0		I

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

7094-004

B1B3V6

D A T A S H E E T

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R409124-04</u>	Client sample id <u>B1B3V6</u>	
Dept sample id <u>7094-004</u>	Location/Matrix <u>Hanford Site</u>	<u>WATER</u>
Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 08:00</u>	<u>10.9 L</u>
	Custody/SAF No <u>B03-018-5</u>	<u>B03-018</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.068	0.37	0.75	3.0	U	93A
Gross Beta	12587-47-2	-0.458	1.3	2.2	4.0	U	93B
Carbon 14	14762-75-5	-4.95	21	35	200	U	C
Technetium 99	14133-76-7	1.54	1.8	6.1	15	U	TC
Total Uranium (ug/L)	7440-61-1	0.007	0.007	0.014	0.10	U	U_T
Total Radium	ALPHA-RA	-0.087	0.087	0.47	1.0	U	RAT
Iodine 129	15046-84-1	-0.007	1.6	3.6	5.0	U	I

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Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

7094-005

B1B3T6

D A T A S H E E T

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R409124-05</u>	Client sample id <u>B1B3T6</u>	
Dept sample id <u>7094-005</u>	Location/Matrix <u>Hanford Site</u>	<u>WATER</u>
Received <u>09/16/04</u>	Collected/Volume <u>09/15/04 10:44</u>	<u>10.9 L</u>
	Custody/SAF No <u>B03-018-6</u>	<u>B03-018</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.531	1.3	1.9	3.0	U	93A
Gross Beta	12587-47-2	38.3	2.7	2.1	4.0		93B
Carbon 14	14762-75-5	2.45	21	35	200	U	C
Technetium 99	14133-76-7	66.3	4.6	4.2	15		TC
Total Uranium (ug/L)	7440-61-1	2.59	0.28	0.014	0.10	B	U_T
Total Radium	ALPHA-RA	-0.051	0.14	0.36	1.0	U	RAT
Iodine 129	15046-84-1	2.52	1.4	3.1	5.0	U	I

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

7094-006

B1B3T8

DATA SHEET

SDG <u>7094</u>	Client/Case no <u>Hanford</u>	SDG <u>H2724</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R409124-06</u>	Client sample id <u>B1B3T8</u>	
Dept sample id <u>7094-006</u>	Location/Matrix <u>Hanford Site</u> <u>WATER</u>	
Received <u>09/17/04</u>	Collected/Volume <u>09/16/04 08:33</u> <u>10.9 L</u>	
	Custody/SAF No <u>B03-018-1</u> <u>B03-018</u>	

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	1.21	1.1	0.97	3.0		93A
Gross Beta	12587-47-2	39.1	2.6	1.7	4.0		93B
Carbon 14	14762-75-5	8.80	21	35	200	U	C
Technetium 99	14133-76-7	67.2	4.6	4.0	15		TC
Total Uranium (ug/L)	7440-61-1	2.35	0.25	0.014	0.10	B	U_T
Total Radium	ALPHA-RA	-0.022	0.11	0.49	1.0	U	RAT
Iodine 129	15046-84-1	4.99	1.9	4.1	5.0		I

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test IC Matrix WATER
 SDG 7094
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

TECHNETIUM 99 IN WATER

BETA COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2724

RESULTS

LAB RAW SUF- Technetium
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID 99

Preparation batch 7095-194

R409124-01	7094-001	B1B3V0	63.5
R409124-02	7094-002	B1B3V2	60.6
R409124-03	7094-003	B1B3V4	56.5
R409124-04	7094-004	B1B3V6	U
R409124-05	7094-005	B1B3T6	66.3
R409124-06	7094-006	B1B3T8	67.2
R409124-07	7094-007	LCS (QC ID=49136)	ok
R409124-08	7094-008	BLK (QC ID=49137)	U
R409124-09	7094-009	Duplicate (R409124-01)	ok

Nominal values and limits from method RDLs (pCi/L) 15
 ERDF Sept. 2004

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7095-194 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 194

R409124-01	B1B3V0	5.3	0.100	90	56	40	10/22/04	10/25	GRB-224
R409124-02	B1B3V2	6.1	0.100	88	50	42	10/22/04	10/27	GRB-218
R409124-03	B1B3V4	7.4	0.100	70	51	41	10/22/04	10/26	GRB-220
R409124-04	B1B3V6	6.1	0.100	81	50	41	10/22/04	10/26	GRB-222
R409124-05	B1B3T6	4.2	0.100	87	100	42	10/22/04	10/27	GRB-221
R409124-06	B1B3T8	4.0	0.100	84	100	41	10/22/04	10/27	GRB-222
R409124-07	LCS (QC ID=49136)	8.3	0.100	80	<u>32</u>		10/22/04	10/25	GRB-224
R409124-08	BLK (QC ID=49137)	4.8	0.100	80	100		10/22/04	10/26	GRB-231
R409124-09	Duplicate (R409124-01) (QC ID=49138)	4.2	0.100	85	100	42	10/22/04	10/27	GRB-223

Nominal values and limits from method 15 0.100 20-105 50 180

METHOD SUMMARIES

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 Protocol Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test IC Matrix WATER

SDG 7094

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TECHNETIUM 99 IN WATER

BETA COUNTING

Client Hanford

Contract No. 630

Contract SDG H2724

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
	CP-430	Technetium-99 Purification (Water) by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES \pm 2 SD	MDA	<u>5.6</u>	\pm	<u>3.0</u>
FOR 9 SAMPLES	YIELD	<u>83</u>	\pm	<u>12</u>

METHOD SUMMARIES

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

LAB METHOD SUMMARY

TOTAL ALPHA RADIUM IN WATER
GAS PROPORTIONAL COUNTING

Test RAT Matrix WATER
SDG 7094
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2724

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Total Radium

Preparation batch 7095-194

R409124-01	7094-001	B1B3V0	U
R409124-02	7094-002	B1B3V2	U
R409124-03	7094-003	B1B3V4	U
R409124-04	7094-004	B1B3V6	U
R409124-05	7094-005	B1B3T6	U
R409124-06	7094-006	B1B3T8	U
R409124-07	7094-007	LCS (QC ID=49136)	ok
R409124-08	7094-008	BLK (QC ID=49137)	U
R409124-09	7094-009	Duplicate (R409124-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.0
ERDF Sept. 2004

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7095-194 2σ prep error 5.0 % Reference Lab Notebook 7095 pg. 194

R409124-01	B1B3V0	0.48	0.200	97	100	41	10/21/04	10/26	GAW-114
R409124-02	B1B3V2	0.46	0.200	96	100	41	10/21/04	10/26	GAW-115
R409124-03	B1B3V4	0.42	0.200	94	100	44	10/21/04	10/29	GAW-114
R409124-04	B1B3V6	0.47	0.200	94	100	44	10/21/04	10/29	GAW-115
R409124-05	B1B3T6	0.36	0.200	94	100	45	10/21/04	10/30	GAW-114
R409124-06	B1B3T8	0.49	0.200	93	100	40	10/21/04	10/26	GAW-114
R409124-07	LCS (QC ID=49136)	0.48	0.200	92	100		10/21/04	10/26	GAW-115
R409124-08	BLK (QC ID=49137)	0.36	0.200	93	100		10/21/04	10/30	GAW-114
R409124-09	Duplicate (R409124-01) (QC ID=49138)	0.46	0.200	96	100	42	10/21/04	10/27	GAW-115

Nominal values and limits from method 1.0 0.200 20-105 100 180

METHOD SUMMARIES

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

LAB METHOD SUMMARY, cont.

TOTAL ALPHA RADIUM IN WATER
GAS PROPORTIONAL COUNTING

Test RAT Matrix WATER
SDG 7094
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG_H2724

PROCEDURES REFERENCE RATOT_GPC
DWP-880 Total Radium in Drinking Water, rev 0

AVERAGES \pm 2 SD MDA 0.44 \pm 0.10
FOR 9 SAMPLES YIELD 94 \pm 3

METHOD SUMMARIES

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test 93A Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2724

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7095-194					
R409124-01	93	7094-001	B1B3V0	U	
R409124-02	93	7094-002	B1B3V2	U	
R409124-03	93	7094-003	B1B3V4	U	
R409124-04	93	7094-004	B1B3V6	U	
R409124-05	93	7094-005	B1B3T6	U	
R409124-06	93	7094-006	B1B3T8	1.21	
R409124-07	93	7094-007	LCS (QC ID=49136)	ok	
R409124-08	93	7094-008	BLK (QC ID=49137)	U	
R409124-09	93	7094-009	Duplicate (R409124-01)	- U	

Nominal values and limits from method RDLs (pCi/L) 3.0
ERDF Sept. 2004

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT	SAMPLE ID	pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
<hr/>																
Preparation batch 7095-194		2σ prep error		20.0 %	Reference	Lab Notebook	7095	pg.		194						
R409124-01	93	B1B3V0		1.1	0.300			64		100			29	10/13/04	10/14	GRB-110
R409124-02	93	B1B3V2		1.3	0.300			68		100			29	10/13/04	10/14	GRB-111
R409124-03	93	B1B3V4		1.4	0.300			64		100			29	10/13/04	10/14	GRB-112
R409124-04	93	B1B3V6		0.75	0.300			0		100			29	10/13/04	10/14	GRB-114
R409124-05	93	B1B3T6		1.9	0.300			75		100			29	10/13/04	10/14	GRB-115
R409124-06	93	B1B3T8		0.97	0.300			57		100			28	10/13/04	10/14	GRB-101
R409124-07	93	LCS (QC ID=49136)		0.83	0.300			21		100				10/13/04	10/14	GRB-102
R409124-08	93	BLK (QC ID=49137)		0.94	0.300			21		100				10/13/04	10/14	GRB-105
R409124-09	93	Duplicate (R409124-01)		1.2	0.300			68		100			29	10/13/04	10/14	GRB-109
		(QC ID=49138)														

Nominal values and limits from method 3.0 0.300 5-250 100 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test 93A Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2724

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
CP-120 Gross Alpha and Gross Beta in Water, rev 6

AVERAGES \pm 2 SD MDA 1.2 \pm 0.70
FOR 9 SAMPLES RESIDUE 49 \pm 54

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test 93B Matrix WATERSDG 7094Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client HanfordContract No. 630Contract SDG H2724

RESULTS

LAB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Gross Beta

Preparation batch 7095-194

R409124-01	93	7094-001	B1B3V0	34.3
R409124-02	93	7094-002	B1B3V2	34.1
R409124-03	93	7094-003	B1B3V4	33.8
R409124-04	93	7094-004	B1B3V6	U
R409124-05	93	7094-005	B1B3T6	38.3
R409124-06	93	7094-006	B1B3T8	39.1
R409124-07	93	7094-007	LCS (QC ID=49136)	ok
R409124-08	93	7094-008	BLK (QC ID=49137)	U
R409124-09	93	7094-009	Duplicate (R409124-01)	ok

Nominal values and limits from method RDLs (pCi/L) 4.0
ERDF Sept. 2004

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR

Preparation batch 7095-194 2σ prep error 15.0 % Reference Lab Notebook 7095 pg. 194

R409124-01	93	B1B3V0	1.8	0.300			64	100		29	10/13/04	10/14	GRB-110
R409124-02	93	B1B3V2	2.0	0.300			68	100		29	10/13/04	10/14	GRB-111
R409124-03	93	B1B3V4	2.2	0.300			64	100		29	10/13/04	10/14	GRB-112
R409124-04	93	B1B3V6	2.2	0.300			0	100		29	10/13/04	10/14	GRB-114
R409124-05	93	B1B3T6	2.1	0.300			75	100		29	10/13/04	10/14	GRB-115
R409124-06	93	B1B3T8	1.7	0.300			57	100		28	10/13/04	10/14	GRB-101
R409124-07	93	LCS (QC ID=49136)	1.8	0.300			21	100			10/13/04	10/14	GRB-102
R409124-08	93	BLK (QC ID=49137)	2.0	0.300			21	100			10/13/04	10/14	GRB-105
R409124-09	93	Duplicate (R409124-01)	1.9	0.300			68	100		29	10/13/04	10/14	GRB-109
		(QC ID=49138)											

Nominal values and limits from method 4.0 0.300 5-250 100 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNEProtocol HanfordVersion Ver 1.0Form DVD-LMSVersion 3.06Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test 93B Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2724

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
CP-120 Gross Alpha and Gross Beta in Water, rev 6

AVERAGES \pm 2 SD MDA 2.0 \pm 0.36
FOR 9 SAMPLES RESIDUE 49 \pm 54

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test I Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN WATER

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2724

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Iodine 129

Preparation batch 7095-194

R409124-01	7094-001	B1B3V0	13.3
R409124-02	7094-002	B1B3V2	13.6
R409124-03	7094-003	B1B3V4	6.53
R409124-04	7094-004	B1B3V6	U
R409124-05	7094-005	B1B3T6	U
R409124-06	7094-006	B1B3T8	4.99
R409124-07	7094-007	LCS (QC ID=49136)	ok
R409124-08	7094-008	BLK (QC ID=49137)	U
R409124-09	7094-009	Duplicate (R409124-01)	ok

Nominal values and limits from method RDLs (pCi/L) 5.0
ERDF Sept. 2004

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED

Preparation batch 7095-194 2σ prep error 5.0 % Reference Lab Notebook 7095 pg. 194

R409124-01	B1B3V0	3.7	0.250	88	554	40	10/20/04	10/25	XSPEC-004
R409124-02	B1B3V2	3.2	0.250	82	912	40	10/20/04	10/25	XSPEC-004
R409124-03	B1B3V4	5.1	0.250	87	620	41	10/20/04	10/26	XSPEC-004
R409124-04	B1B3V6	3.6	0.250	89	451	41	10/20/04	10/26	XSPEC-004
R409124-05	B1B3T6	3.1	0.250	94	604	42	10/20/04	10/27	XSPEC-004
R409124-06	B1B3T8	4.1	0.250	96	617	41	10/20/04	10/27	XSPEC-002
R409124-07	LCS (QC ID=49136)	17	0.250	89	244		10/20/04	10/27	XSPEC-002
R409124-08	BLK (QC ID=49137)	3.3	0.250	81	767		10/20/04	10/27	XSPEC-004
R409124-09	Duplicate (R409124-01)	5.0	0.250	95	487	42	10/20/04	10/27	XSPEC-002
	(QC ID=49138)								

Nominal values and limits from method 5.0 0.250 20-105 300 100 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test 1 Matrix WATER

SDG 7094

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

IODINE 129 IN WATER

GAMMA SPECTROSCOPY

Client Hanford

Contract No. 630

Contract SDG H2724

PROCEDURES	REFERENCE	I129_SEP_LEPS_GS
	CP-024	Iodine-129, Sample Dissolution, rev 5
	CP-530	Iodine-129 Purification, rev 1

AVERAGES \pm 2 SD

MDA 5.3 \pm 8.9

FOR 9 SAMPLES

YIELD 89 \pm 11

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test U T Matrix WATER
 SDG 7094
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, TOTAL IN WATER
 KINETIC PHOSPHORIMETRY (KPA)

Client Hanford
 Contract No. 630
 Contract SDG H2724

RESULTS

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Uranium
Preparation batch 7095-194				
R409124-01		7094-001	B1B3V0	2.38
R409124-02		7094-002	B1B3V2	2.15
R409124-03		7094-003	B1B3V4	2.95
R409124-04		7094-004	B1B3V6	U
R409124-05		7094-005	B1B3T6	2.59
R409124-06		7094-006	B1B3T8	2.35
R409124-07		7094-007	LCS (QC ID=49136)	ok
R409124-08		7094-008	BLK (QC ID=49137)	0.015
R409124-09		7094-009	Duplicate (R409124-01)	ok

Nominal values and limits from method RDLs (ug/L) 0.10
 ERDF Sept. 2004

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL -		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	ug/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7095-194 2σ prep error 9.0 % Reference Lab Notebook 7095 pg. 194															
R409124-01		B1B3V0	0.014	0.0200								27	10/12/04	10/12	KPA-001
R409124-02		B1B3V2	0.014	0.0200								27	10/12/04	10/12	KPA-001
R409124-03		B1B3V4	0.014	0.0200								27	10/12/04	10/12	KPA-001
R409124-04		B1B3V6	0.014	0.0200								27	10/12/04	10/12	KPA-001
R409124-05		B1B3T6	0.014	0.0200								27	10/12/04	10/12	KPA-001
R409124-06		B1B3T8	0.014	0.0200								26	10/12/04	10/12	KPA-001
R409124-07		LCS (QC ID=49136)	0.14	0.0200									10/12/04	10/12	KPA-001
R409124-08		BLK (QC ID=49137)	0.014	0.0200									10/12/04	10/12	KPA-001
R409124-09		Duplicate (R409124-01)	0.014	0.0200								27	10/12/04	10/12	KPA-001
		(QC ID=49138)													

Nominal values and limits from method 0.10 0.0200 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test U I Matrix WATER

SDG 7094

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

URANIUM, TOTAL IN WATER

KINETIC PHOSPHORIMETRY (KPA)

Client Hanford

Contract No. 630

Contract SDG H2724

PROCEDURES	REFERENCE	UTOT_KPA
	CP-044	Sample Preparation for Total Uranium by Kinetic Phosphorimetry, rev 6
	CP-929	Calibration of the Kinetic Phosphorimeter, rev 9

AVERAGES \pm 2 SD	MDA <u>0.028</u> \pm <u>0.084</u>
FOR 9 SAMPLES	YIELD _____ \pm _____

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test C Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN WATER
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2724

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Carbon 14

Preparation batch 7095-194

R409124-01	7094-001	B1B3V0	U
R409124-02	7094-002	B1B3V2	U
R409124-03	7094-003	B1B3V4	U
R409124-04	7094-004	B1B3V6	U
R409124-05	7094-005	B1B3T6	U
R409124-06	7094-006	B1B3T8	U
R409124-07	7094-007	LCS (QC ID=49136)	ok
R409124-08	7094-008	BLK (QC ID=49137)	U
R409124-09	7094-009	Duplicate (R409124-01)	- U
R409124-10	7094-010	Spike (R409124-02)	ok X

Nominal values and limits from method RDLs (pCi/L) 200
ERDF Sept. 2004

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR

Preparation batch 7095-194 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 194

R409124-01	B1B3V0	36	0.0300	100	75	48	11/01/04	11/02	LSC-005
R409124-02	B1B3V2	35	0.0300	100	75	48	11/01/04	11/02	LSC-005
R409124-03	B1B3V4	34	0.0300	100	75	48	11/01/04	11/02	LSC-005
R409124-04	B1B3V6	35	0.0300	100	75	48	11/01/04	11/02	LSC-005
R409124-05	B1B3T6	35	0.0300	100	75	48	11/01/04	11/02	LSC-005
R409124-06	B1B3T8	35	0.0300	100	75	47	11/01/04	11/02	LSC-005
R409124-07	LCS (QC ID=49136)	34	0.0300	100	75		11/01/04	11/02	LSC-005
R409124-08	BLK (QC ID=49137)	34	0.0300	100	75		11/01/04	11/02	LSC-005
R409124-09	Duplicate (R409124-01)	35	0.0300	100	75	48	11/01/04	11/02	LSC-005
	(QC ID=49138)								
R409124-10	Spike (R409124-02)	63	0.0200	100	52	49	11/01/04	11/03	LSC-005
	(QC ID=49139)								

Nominal values and limits from method 200 0.0300 50 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2724

Test C Matrix WATER
SDG 7094
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

CARBON 14 IN WATER
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2724

PROCEDURES REFERENCE C14_CHEM_LSC
CP-241 Carbon-14 in Aqueous Samples, rev 6

AVERAGES \pm 2 SD MDA 38 \pm 18
FOR 10 SAMPLES YIELD 100 \pm 0

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2724

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 630

Case no SDG H2724

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 630

Case no SDG_H2724

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2724

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2724

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
 - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
 - H Similar to 'L' except the recovery was high.
 - P The RESULT is 'preliminary'.
 - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
 - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2724

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2724

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2724

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford

Contract No. 630

Case no SDG_H2724

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 11/12/04

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SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2724

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford

Contract No. 630

Case no SDG H2724

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 630

Case no SDG_H2724

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2724

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
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SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2724

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2724

SDG 7094
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2724

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/12/04

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # 803-018 B04-002-2	
						Page 1 of 2	
Collector DURATEK F.M. HALL		Contact/Requester Dot Stewart H2724 (7094)		Telephone No. 509-376-5056		MSIN FAX	
SAF No. B04-002		Sampling Origin HANFORD SITE		Purchase Order/Charge Code			
Project Title ERDF SEPT 2004		DTS - SALS H83		Ice Chest No. SML 510		Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7920 9058 2469			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS ** **				SPECIAL INSTRUCTIONS			
				Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T9 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W	↓	↓	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V0		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V0		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x20-mL P	Activity Scan	None
B1B3V0		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V0		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V0		W			1x125-mL G/P	Carbon-14	None
B1B3V0		W			4x1000-mL G/P	Iodine-129	None
B1B3V0		W			Radium -226 (Total) mcm 9/17/4	HNO3 to pH <2	

Relinquished By DURATEK F.M. HALL		Print <i>[Signature]</i>	Sign	Date/Time 1400 SEP 15 2004	Received By FED Ex	Print	Sign	Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>[Signature]</i>				Date/Time 9/14/04 10:25	Received By <i>[Signature]</i>	Fred Sarao		Date/Time 9/16/04 3:15 pm	
Relinquished By				Date/Time	Received By			Date/Time	
Relinquished By				Date/Time	Received By			Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B03-018
B04-002-3

Page 1 of 2

Collector

DURATEK
F. M. HALL

Contact/Requester

Dot Stewart

Telephone No.

509-376-5056

MSIN

FAX

SAF No.

B04-002

Sampling Origin

HARTFORD SITE

Purchase Order/Charge Code

Project Title

ERDF SEPT 2004

Method of Shipment

Govt Truck

Ice Chest No.

Small 510

Temp.

Shipped To (Lab)

DTMA/RECRA

Bill of Lading/Air Bill No.

792090582469

Protocol

CERCLA

Priority: 45 Days

Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS

.. ..

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes

☒

No

☐

Relinquished By

DURATEK
F. M. HALL

Print

Sign

Date/Time

1400 SEP 15 2004

Received By

FREDERICK

Print

Sign

Date/Time

Relinquished By

Fred Ex

Date/Time

9/16/04 10:25

Received By

Fred Sara

Date/Time

9/16/04 3:15

Relinquished By

Date/Time

Received By

Date/Time

Relinquished By

Date/Time

Received By

Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

S = Soil

SE = Sediment

SO = Solid

SL = Sludge

W = Water

O = Oil

A = Air

DS = Drum Solid

DL = Drum Liquid

T = Tissue

WI = Wine

L = Liquid

V = Vegetation

X = Other

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B03-018 B04-002-4	
						Page 1 of 2	
Collector R.T. SICKLE			Contact/Requester H2724 (7094) Dot Stewart		Telephone No. 509-376-5056 MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford Site		Purchase Order/Charge Code		
Project Title ERDF SEPT 2004			DTs - SAWS - 184		Ice Chest No. SMT 226 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7220 9058 2491		
Protocol CERCLA			Priority: 45 Days		Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V3 (F)		W	9-15-04	0914	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V4		W			1x200-mL G/P <i>2-9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V4		W			1x200-mL G/P <i>2-9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x20-mL P <i>2-9-15-04</i>	Activity Scan	None
B1B3V4		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V4		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V4		W			1x125-mL G/P	Carbon-14	None
B1B3V4		W			4x1000-mL G/P	Iodine-129	None
B1B3V4		W		2x1000-mL G/P	Radium 226 (Total) <i>17001</i> <i>9/17/04</i>	HNO3 to pH <2	

Relinquished By R.T. SICKLE Print Sign <i>[Signature]</i> Date/Time SEP 15 2004		Received By Fal Ex Print Sign Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred S Print Sign <i>[Signature]</i> Date/Time 9/16/04 10:25		Received By Fred Sarao Print Sign <i>[Signature]</i> Date/Time 9/16/04 2:15		
Relinquished By _____ Print Sign _____ Date/Time _____		Received By _____ Print Sign _____ Date/Time _____		
Relinquished By _____ Print Sign _____ Date/Time _____		Received By _____ Print Sign _____ Date/Time _____		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					C.O.C. # B03-018 B04-002-5	
		Page 1 of 2						
Collector R.T. SICKLE			Contact/Requester Dot Stewart H2724 (7094)			Telephone No. 509-376-5056 MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford Site			Purchase Order/Charge Code		
Project Title ERDE SEPT 2004			DTS - SAMS - 1184			Ice Chest No. ERC-99.058 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment Govt Truck			Bill of Lading/Air Bill No. 7920 0458 2480		
Protocol CERCLA			Priority: 45 Days			Offsite Property No. PTK 14126		
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS		Hold Time		
						Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V5 (F)		W	9-15-04	0800	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W	↓	↓	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V6		W			1x200-mL G/P 9-15-04	Alkalinity - 310.1	Cool 4C
B1B3V6		W			1x500-mL G/P 300 9-15-04	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x20-mL P	Activity Scan	None
B1B3V6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V6		W			1x125-mL G/P	Carbon-14	None
B1B3V6		W			4x1000-mL G/P	Iodine-129	None
B1B3V6		W		2x1000-mL G/P	Radium 226 (Total) mcm 9/17/4	HNO3 to pH <2	

Relinquished By R.T. SICKLE Print Sign		Date/Time SEP 15 2004	Received By Fred EX Print Sign		Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred EX Print Sign		Date/Time 9/16/04 10:25	Received By Fred Sarao Print Sign		Date/Time 9/16/04 3:45	
Relinquished By		Date/Time	Received By		Date/Time	
Relinquished By		Date/Time	Received By		Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
H2724 (7094)

C.O.C. # B03-018
~~B04-002-5~~

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FAX

[illegible]

Date/Time

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B03-018 B04-002-6	
						Page <u>1</u> of <u>2</u>	
Collector R.T. SICKLE			Contact/Requester H2724 (7094) Dot Stewart		Telephone No. 509-376-5056 MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford Site		Purchase Order/Charge Code		
Project Title ERDE SEPT 2004			DTs-SAWS-1484		Ice Chest No. ERC-99-058 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7920 0958 2480		
Protocol CERCLA			Priority: 45 Days		Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS ** **				SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T5 (F)		W	9-15-04	1044	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T6		W			1x200-mL G/P 500 9-15-04	Alkalinity - 310.1	Cool 4C
B1B3T6		W			1x300-mL G/P 500 9-15-04	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x20-mL P	Activity Scan	None
B1B3T6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T6		W			1x125-mL G/P	Carbon-14	None
B1B3T6		W			4x1000-mL G/P	Iodine-129	None
B1B3T6		W			Radium 226 (Total) mem 9/17/04	HNO3 to pH <2	

Relinquished By R.T. SICKLE Print Sign Date/Time SEP 15 2004		Received By Fred Ex Print Sign Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Ex Print Sign Date/Time 9/16/04 10:25		Received By Fred Ex Print Sign Date/Time 9/16/04 3:45		
Relinquished By _____ Print Sign _____ Date/Time _____		Received By _____ Print Sign _____ Date/Time _____		
Relinquished By _____ Print Sign _____ Date/Time _____		Received By _____ Print Sign _____ Date/Time _____		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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PNNL	<h2 style="margin:0;">CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</h2>	C.O.C. # B03-018 B04-002-1
		Page 1 of 2
Collector R.T. SICKLE	Contact/Requester H2724 (7094) Dot Stewart	Telephone No. 509-376-5056 MSIN FAX
SAF No. B04-002	Sampling Origin Hanford site	Purchase Order/Charge Code
Project Title ERDF SEPT 2004	DTS-SAW3-1484	Ice Chest No. 5mL 556 Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7927 3263 8185
Protocol CERCLA	Priority: 45 Days	Offsite Property No.
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T7 (F)		W	9-16-04	0833	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T8		W			1x200-mL G/P 500 PPT	Alkalinity - 310.1	Cool 4C
B1B3T8		W			1x200-mL G/P 500 PPT	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x20-mL P	Activity Scan	None
B1B3T8		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T8		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T8		W			1x125-mL G/P	Carbon-14	None
B1B3T8		W			4x1000-mL G/P	Iodine-129	None
B1B3T8		W			2x1000-mL G/P	Radium-226 (Total) MCm 9/17/04	HNO3 to pH <2

Relinquished By R.T. SICKLE	Date/Time SEP 16 2004	Received By Fred Sanao	Date/Time 9/17/04 10:35	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Sludge W1 = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Sanao	Date/Time 9/17/04 9:10	Received By Fred Sanao	Date/Time 9/17/04 10:35	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time		

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C.# B03-018 B04-002-7	
		H2724 (7094)		Page <u>1</u> of <u>1</u>	
Collector R.T. SICKLE		Contact/Requester Dot Steward	Telephone No. 509 376-5056 MSIN FAX		
SAF No. B04-002		Sampling Origin Hanford site	Purchase Order/Charge Code		
Project Title ERDE SEPT 2004		DIS-5A05-184	Ice Chest No. 5M2 550 Temp.		
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7927 3263 8185		
Protocol CERCLA		Priority: 45 Days	Offsite Property No.		

POSSIBLE SAMPLE HAZARDS/REMARKS ** **	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B439		W	9-16-04	0730	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B439		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By R.T. SICKLE Sign Date/Time SEP 16 2004	Received By Fred Ex Print Fred Ex Sign Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WL = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Ex Sign Date/Time 9/17/04 9:10	Received By Fred Sarao Print Fred Sarao Sign Date/Time 9/17/04 12:35 AM	
Relinquished By Date/Time	Received By Date/Time	
Relinquished By Date/Time	Received By Date/Time	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time		

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					C.O.C. # B03-018 B04-002-8	
		H2724 (7094)					Page <u>1</u> of <u>1</u>	
Collector DURATEK F. M. HALL		Contact/Requester DOT STEWART			Telephone No. 504 376 5056		MSIN FAX	
SAF No. B04-002		Sampling Origin HANFORD SITE			Purchase Order/Charge Code			
Project Title ERDF SEPT 2004		DTS - SHWS H83			Ice Chest No. SMC 510		Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Gov Vehicle			Bill of Lading/Air Bill No. 792090582461			
Protocol CERCLA		Priority: 45 Days			Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS ** **					SPECIAL INSTRUCTIONS		Hold Time	
							Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B440		W	9-15-04	0850	3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B440		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By DURATEK F. M. HALL		Print <i>[Signature]</i> Sign		Date/Time SEP 15 2004		Received By FRED E. SARAS		Print Sign		Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By Fred Saras		Date/Time 9/16/04 10:25		Received By <i>[Signature]</i>		Date/Time 9/16/04 3:15 pm							
Relinquished By		Date/Time		Received By		Date/Time							
Relinquished By		Date/Time		Received By		Date/Time							

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C.# B03-018 B04-002-9
							Page 1 of 1	
Collector R.T. SICKLE			Contact/Requester H2724 (7094)			Telephone No. MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford site			Purchase Order/Charge Code 7920		
Project Title ERDF SEPT 2004			DTS - SAWS - HBY			Ice Chest No. ERC-99-058 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment			Bill of Lading/Air Bill No. 7920 0958 2480		
Protocol CERCLA			Priority: 45 Days			Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS						SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis		Preservative
B1B441		W	9-15-04	0800	3x40-mL aGs*	VOA - 8260A (TCL)		HCl or H2SO4 to pH <2 Cool 4C
B1B441		W	↓	↓	1x20-mL P	Activity Scan		None
Relinquished By R.T. SICKLE [Signature]	Print	Sign	Date/Time SEP 15 2004	Date/Time	Received By Fred Ex	Print	Sign	Date/Time
Relinquished By [Signature]	Print	Sign	Date/Time 9/16/04 10:25	Date/Time	Received By Fred Sarao	Print	Sign	Date/Time 9/16/04 3:45
Relinquished By	Print	Sign	Date/Time	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Date/Time	Received By	Print	Sign	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # B03-018 B04-002-T0	
								Page 1 of 1	
Collector R.T. SICKLE		Contact/Requester H2724 (7094)			Telephone No. MSIN FAX				
SAF No. B04-002		Sampling Origin Hanford Site			Purchase Order/Charge Code				
Project Title ERDF SEPT 2004		DTS - 5 AWS - HSY			Ice Chest No. 51N 226 Temp.				
Shipped To (Lab) TMA/RECRA		Method of Shipment			Bill of Lading/Air Bill No. 7920 9058 2491				
Protocol CERCLA		Priority: 45 Days			Offsite Property No.				
POSSIBLE SAMPLE HAZARDS/REMARKS **				SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes [X] No []					
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative		
B1B442		W	9-15-04	0800	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C		
B1B442		W	↓	↓	1x20-mL P	Activity Scan	None		
Relinquished By R.T. SICKLE	Print Sign	Date/Time SEP 15 2004	Received By Fred Ex	Print Sign	Date/Time	Matrix *			
Relinquished By Fred Ex	Print Sign	Date/Time 9/16/04 10:25	Received By Fred Sarao	Print Sign	Date/Time 9/16/04 4:15	S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge W = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other			
Relinquished By	Print Sign	Date/Time	Received By	Print Sign	Date/Time				
Relinquished By	Print Sign	Date/Time	Received By	Print Sign	Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By Date/Time			



RICHMOND, CA LABORATORY
ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: PNNL / Hanford Date: 9/17/07

Ice chest # or description	Small 550					
*Ice chest scanned for activity?	yes					
Custody seals on ice chest intact?	yes					
Custody seals dated?	yes					
Custody seals signed?	yes					
Thermometer number	6536					
Thermometer: time in	10:10					
Thermometer: time out	10:45					
Thermometer reading	5°C					
Correction factor	0					
**Actual temperature	5°C					
Custody seals on samples?	yes					
Custody seals dated?	yes					
Custody seals signed?	yes					

* = If activity indicated, perform wipe test and record alpha; beta/gamma reading in cpm.

** = Record temperature in degrees Celsius.

Technician: T. Bauer

Comments: _____



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: Hanford City: Richland State: WA

Date/Time received: 9/16/04 10:25 CoC No. BOY-002-2,3,4,5,6,8,9,10

Container I.D. No. ERC 99-058 Sml-510 / Sml-226 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []

3. Custody seals on sample containers intact? Yes [☒] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []

5. Packing material is: Wet [☒] Dry []

6. Number of samples in shipping container: 13 Sample Matrix W

7. Number of containers per sample: _____ (Or see CoC ☒)

8. Samples are in correct container Yes [☒] No []

9. Paperwork agrees with samples? Yes [☒] No []

10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [☒]

11. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []

12. Samples are: Preserved [☒] Not preserved [] pH 1 Preservative HNO₃

13. Describe any anomalies: _____

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by [Signature] Date: 9/16/04 Time: 4:15

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. _____

Calibration date _____



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: PNNL / Hanford City Richland State WA

Date/Time received 9/17/04 9:10 CoC No. B-4-002-1 7

Container I.D. No. Sm1 550 Requested TAT (Days) _____ P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []

3. Custody seals on sample containers intact? Yes [☒] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []

5. Packing material is: Wet [☒] Dry []

6. Number of samples in shipping container: 3 Sample Matrix W

7. Number of containers per sample: _____ (Or see CoC ✓)

8. Samples are in correct container Yes [☒] No []

9. Paperwork agrees with samples? Yes [☒] No []

10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [☒]

11. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []

12. Samples are: Preserved [☒] Not preserved [] pH 1 Preservative _____

13. Describe any anomalies: _____

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by [Signature] Date: 9/17/04 Time: 10:35

Customer Sample				Customer Sample			
No.	cpm	mR/hr	wipe	No.	cpm	mR/hr	wipe
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. _____

Calibration date _____



30 October 2004

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

**Subject: Contract No. 630
Analytical Data Package**

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0409L677
SDG #	H2724
SAF #	B03-018
Date Received	9-18-04
# Samples	16
Matrix	Water
Volatiles	X
Semivolatiles	
Pest/PCB	
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated


Orlette S. Johnson



Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1B3V0	002	W	04LVK226	09/15/04	N/A	09/27/04
B1B3V2	004	W	04LVK225	09/15/04	N/A	09/24/04
B1B3V2	004 MS	W	04LVK226	09/15/04	N/A	09/27/04
B1B3V2	004 MSD	W	04LVK226	09/15/04	N/A	09/27/04
B1B3V4	006	W	04LVK225	09/15/04	N/A	09/24/04
B1B3V6	008	W	04LVK225	09/15/04	N/A	09/24/04
B1B3T6	010	W	04LVK225	09/15/04	N/A	09/24/04
B1B440	011	W	04LVK225	09/15/04	N/A	09/24/04
B1B441	012	W	04LVK225	09/15/04	N/A	09/24/04
B1B442	013	W	04LVK225	09/15/04	N/A	09/24/04
B1B3T8	015	W	04LVK226	09/16/04	N/A	09/27/04
B1B439	016	W	04LVK226	09/16/04	N/A	09/27/04

LAB QC:

VBLKWY	MB1	W	04LVK226	N/A	N/A	09/27/04
VBLKWY	MB1 BS	W	04LVK226	N/A	N/A	09/27/04
VBLKXL	MB1	W	04LVK225	N/A	N/A	09/24/04

88888881



Client: TNU-HANFORD B03-018
LVL #: 0409L677
SDG/SAF # H2724/B03-018

W.O. #: 11343-606-001-9999-00
Date Received: 09-18-2004

GC/MS VOLATILE

Ten (10) water samples were collected on 09-15,16-2004.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 09-24,27-2004.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of a discrepancy, which has been noted in the Sample Receipt Record.
2. Samples were analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. Internal standard area and retention time criteria were met.
8. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/25/04
Date

son\group\data\voa\tnu-hanford\0409-677.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 42 pages.

GLOSSARY

DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- ~~MP~~ - ~~Missed Peak:~~ Manually added peak not found by automatic quan program.
- PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.
- RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Volatiles by GC/MS, HSL List

RFW Batch Number: 0409L677

Client: TNUHANFORD B03-018 H2724 Work Order: 11343606001 Page: 1a

*= Outside of EPA CLP QC limits.

Cust ID: B1B3V0 B1B3V2 B1B3V2 B1B3V2 B1B3V4 B1B3V6

RFW#: 002 004 004 MS 004 MSD 006 008

Chlorobenzene	5 U	5 U	92 %	76 %	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

000000007

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 10/07/04 15:43

RFW Batch Number: 0409L677

Client: TNUHANFORD B03-018 H2724 Work Order: 11343606001 Page: 2a

Cust ID:		B1B3T6	B1B440	B1B441	B1B442	B1B3T8	B1B439
Sample RFW#:		010	011	012	013	015	016
Information Matrix:		WATER	WATER	WATER	WATER	WATER	WATER
D.F.:		1.00	1.00	1.00	1.00	1.00	1.00
Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Toluene-d8		96 %	92 %	99 %	96 %	96 %	92 %
Surrogate Bromofluorobenzene		96 %	89 %	92 %	93 %	84 %	97 %
Recovery 1,2-Dichloroethane-d4		88 %	85 %	86 %	88 %	83 %	88 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride		5 U	5 U	5 U	5 U	5 U	5 U
Acetone		10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U	5 U	5 U
Chloroform		2 J	5 U	5 U	5 U	1 J	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		7	5 U	5 U	5 U	1 J	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene		5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Benzene		5 U	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Toluene		5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Cust ID: B1B3T6 B1B440 B1B441 B1B442 B1B3T8 B1B439

RFW#: 010 011 012 013 015 016

Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

00000000

RFW Batch Number: 0409L677

Client: **TNUHANFORD B03-018 H2724** Work Order: 11343606001 Page: 3a

Cust ID: VBLKWY

VBLKWY BS

VBLKXL

Sample Information

RFW#:	04LVK226-MB1	04LVK226-MB1	04LVK225-MB1
Matrix:	WATER	WATER	WATER
D.F.:	1.00	1.00	1.00
Units:	ug/L	ug/L	ug/L

[illegible]

*= Outside of EPA CLP OC limits.

100-443887-103

Cust ID: VBLKWY VBLKWY BS VBLKXL

RFW#: 04LVK226-MB1 04LVK226-MB1 04LVK225-MB1

Chlorobenzene	5	U	94	%	5	U
Ethylbenzene	5	U	5	U	5	U
Styrene	5	U	5	U	5	U
Xylene (total)	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3V0

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-002

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092707

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/27/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3V2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092411

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3V4

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092412

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	22.502	7	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3V6

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-008

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092413

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3T6

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-010

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092414

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	22.503	5	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B440

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-011

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092415

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B441

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-012

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092416

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B442

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-013

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092417

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B3T8

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-015

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092705

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/27/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1B439

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 0409L677-016

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092706

Level: (low/med) LOW

Date Received: 09/18/04

% Moisture: not dec. _____

Date Analyzed: 09/27/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKWY

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 04LVK226-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092704

Level: (low/med) LOW

Date Received: 09/27/04

% Moisture: not dec. _____

Date Analyzed: 09/27/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKXL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 04LVK225-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: k092409

Level: (low/med) LOW

Date Received: 09/24/04

% Moisture: not dec. _____

Date Analyzed: 09/24/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04109L 677

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU HANFORD</u> SAF# <u>804-002</u> <u>803-018</u>	Refrigerator # <u>1</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid <u>G</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
Project # <u>11343-606-001-9999-00</u>		Solid					
Project Contact/Phone # _____	Volume	Liquid <u>40</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
Lionville Laboratory Project Manager <u>OS</u>		Solid					
QC <u>SPR</u> Del <u>Std</u> TAT <u>30 Days</u>	Preservatives	<u>HCL</u>	<u>HNO3</u>	<u>H2O2</u>	<u>HNS</u>	<u>H2SO4</u>	<u>H2SO4</u>
Date Rec'd <u>9/18/04</u> Date Due <u>10/18/04</u>	ANALYSES REQUESTED →	ORGANIC VOA BNA Pes/ PCB Herb INORG Metal Zn IC ALK NO3 TDS TOX ACT SCAN					

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
			MS	MSD				MEQ SO	MEQ TO	ICD	TALK	IN3NA	ITDS	ITOX					
	001	BIB3T9 (F)			W	7/5-14	1102												
	002	V0						3											
	003	V1 (F)																	
	004	V2						3											
	005	V3 (F)					0914												
	006	V4						3											
	007	V5 (F)					0800												
	008	V6						3											
	009	T5 (F)					1044												
	010	T6						3											

Special Instructions: Run Matrix QC

DATE/REVISIONS:

10/4/04 1. Per client/PM, SAF# = 803-018

2. _____
3. _____
4. _____
5. _____
6. _____

MEQ = As, Ba, Cr, Pb, Se, Sn, V, Zn

ICD = CL, FL, BR, NO₂, NO₃, SO₄, PO₄

Relinquished by	Received by	Date	Time
<u>Fred E</u>	<u>V. H</u>	<u>9-18-04</u>	<u>1005</u>
<u>L</u>	<u>L</u>	<u>L</u>	<u>1115</u>

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	<u>ORIGINAL</u>		
	<u>REWRITTEN</u>		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Lionville Laboratory Use Only

Samples were:

- 1) Shipped _____ or _____
- Hand Delivered _____
- Airbill # _____
- 2) Ambient or Chilled _____
- 3) Received in Good Condition _____
- 4) Samples Properly Preserved Y or N
- 5) Received Within Holding Times Y or N

Tamper Resistant Seal was:

- 1) Present on Outer Package Y or N
- 2) Unbroken on Outer Package Y or N
- 3) Present on Sample Y or N
- 4) Unbroken on Sample Y or N
- COC Record Present Upon Sample Rec't Y or N
- Cooler Temp. _____ °C

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU Hanford B04-002</u>	Refrigerator # <u>1</u>	<u>A-C</u>	<u>DD</u>	<u>DD</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid <u>G</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
Project # _____	Solid _____								
Project Contact/Phone # <u>all P's</u>	Volume	Liquid <u>40</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>20</u>
Lionville Laboratory Project Manager _____	Solid _____								
QC _____ Del _____ TAT _____	Preservatives	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>	<u>HCL</u>
Date Rec'd _____ Date Due _____	ANALYSES REQUESTED →	ORGANIC				INORG			
		VOA	BNA	Pest/PCB	Herb	Metal	N	C	Act. S&N

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only									
			MS	MSD				ME@SO	ME@TO	LC@	TALK	TN3M2	ITDS	ITOX			
	011	BIB 440			W	9-15-04	0850	3									1
	012	L 441			L		0800	3									1
	013	L 442			L			3									1
	014	BIB 3 T7 (F)			L	9-16-04	0833		1								
	015	L T8			L			3	1								
	016	BIB 439			L		0730	3									1

Special Instructions:

ME① = As, Ba, Cr, Pb, Se, Sn, V, Zn

IC① = Cl, Br, NO₃, NO₂, SO₄, PO₄, FL

DATE/REVISIONS:

- _____
- _____
- _____
- _____
- _____
- _____

Lionville Laboratory Use Only

Samples were:

- 1) Shipped _____ or Hand Delivered _____
Airbill # _____
- 2) Ambient or Chilled _____
- 3) Received in Good Condition Y or N
- 4) Samples Properly Preserved Y or N
- 5) Received Within Holding Times Y or N

Tamper Resistant Seal was:

- 1) Present on Outer Package Y or N
- 2) Unbroken on Outer Package Y or N
- 3) Present on Sample Y or N
- 4) Unbroken on Sample Y or N
- COC Record Present Upon Sample Rec't Y or N
- Cooler Temp. _____ °C

 Discrepancies Between Samples Labels and COC Record? Y or N
 NOTES:

Relinquished by	Received by	Date	Time
<u>F&S Ep</u>	<u>PA-f</u>	<u>9/15/04</u>	<u>1005</u>
<u>L</u>	<u>L</u>	<u>L</u>	<u>1115</u>

Relinquished by	Received by	Date	Time

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-2	
						Page 1 of 2	
Collector DURATEK F. M. HALL		Contact/Requester Dot Stewart		Telephone No. MSIN FAX 509-376-5056			
SAF No. B04-002		Sampling Origin HANFORD SITE		Purchase Order/Charge Code			
Project Title ERDE SEPT 2004		DTS - SALS H83		Ice Chest No. SML 510 Temp.			
Shipped To (Lab) ITMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7920 9058 2469			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T9 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V0		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V0		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x20-mL P	Activity Scan	None
B1B3V0		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V0		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V0		W			1x125-mL G/P	Carbon-14	None
B1B3V0		W			4x1000-mL G/P	Iodine-129	None
B1B3V0		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEK F. M. HALL		Print Sign	Date/Time 1400 SEP 15 2004	Received By FED EX		Print Sign	Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liner SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By FED EX		Date/Time 9/14/04 12:25	Received By Fred Sara		Date/Time 9/16/04 3:15 pm			
Relinquished By Fred Sara		Date/Time 9/17/04 3:00 pm	Received By Fred Ex		Date/Time 9/17/04			
Relinquished By FED EX		Date/Time 9-18-04 1115	Received By O. H. ...		Date/Time 9-18-04 1115			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time

0000000000

PNNL
SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #	B04-002-2
Page 2	of 2

FAX

FAX

804-002

Dot Stewart

509-376-5056

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

[illegible]

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *	
DURKTEK F. M. HALL		[Signature]	SEP 15 2004	FED Ex				S = Soil	DS = Drum Solid
Relinquished By	Date/Time		Received By	Print	Sign	Date/Time		SE = Sediment	DL = Drum Liquid
FED Ex	9/16/04	10:25	[Signature]	Fred Sano		9/16/04 3:15 PM		SO = Solid	T = Tissue
Relinquished By	Date/Time		Received By	Date/Time				SL = Sludge	WL = Wine
[Signature]	9/17/04	3:00	FED Ex	9/17/04				W = Water	L = Liquid
Relinquished By	Date/Time		Received By	Date/Time				O = Oil	V = Vegetation
FED Ex	9/18/04	11:15	[Signature]	9-18-04		11:15		A = Air	X = Other
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time	

PNNL SDG # H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-3	
						Page 1 of 2	
Collector DURATEX F. M. HALL		Contact/Requester Dot Stewart		Telephone No. 509-376-5056		MSIN FAX	
SAF No. B04-002		Sampling Origin HARTFORD SITE		Purchase Order/Charge Code			
Project Title ERDE SEPT 2004		Method of Shipment Govt Truck		Ice Chest No.		Temp.	
Shipped To (Lab) TMA/RECRA		Priority: 45 Days		Bill of Lading/Air Bill No.			
Protocol CERCLA				Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS			
				Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V1 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V2		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V2		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x20-mL P	Activity Scan	None
B1B3V2		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V2		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V2		W			1x125-mL G/P	Carbon-14	None
B1B3V2		W			4x1000-mL G/P	Iodine-129	None
B1B3V2		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEX F. M. HALL		Print 	Sign 	Date/Time 1400 SEP 15 2004	Received By FRED EX	Print 	Sign 	Date/Time 9/16/04 10:25
Relinquished By Fred Ex				Date/Time 9/16/04 10:25	Received By Fred Ex			Date/Time 9/16/04 3:15
Relinquished By Fred Ex				Date/Time 9/17/04 3:00	Received By Fred Ex			Date/Time 9/17/04
Relinquished By Fred Ex				Date/Time 9-18-04 1115	Received By V. Hernandez			Date/Time 9-18-04 1115

FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time	

Matrix *

S = Soil	DS = Drum Solid
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	W = Wine
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

PNNL
SDG# H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **B04-002-3**

Page 2 of 2

Page 2 of 2

Contact/Requestor Dot Stewart	
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FAX[illegible]

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
Relinquished By	OURATEK	<i>[Signature]</i>	SEP 15 2004	Received By	FED EX			
Relinquished By	OURATEK		Date/Time	Received By	Fred Sarao		Date/Time	
Relinquished By	Fred Ex	9/16/04	10:25	Received By	Fred Sarao	9/16/04	3:15 pm	
Relinquished By	Fred Sarao	9/17/04	3:00	Received By	Fred Ex	9/17/04		
Relinquished By	Fred Ex	9-18-04	1115	Received By	V. Hernandez	9-18-04	1115	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)							Date/Time

PNNL <i>SDA# H2724</i>		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # B04-002-4	
				Page 1 of 2	
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. MSIN FAX 509-376-5056	
SAF No. B04-002		Sampling Origin <i>Hanford Site</i>		Purchase Order/Charge Code	
Project Title ERDF SEPT 2004		<i>DTs - Saws - 1484</i>		Ice Chest No. <i>SMT 226</i> Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. <i>7A20 9058 2491</i>	
Protocol CERCLA		Priority: 45 Days		Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
			Hold Time		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V3 (F)		W	<i>9-15-04</i>	<i>0914</i>	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V4		W			<i>1x200 mL G/P</i> <i>9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V4		W			<i>1x200 mL G/P</i> <i>9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x20-mL P	Activity Scan	None
B1B3V4		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V4		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V4		W			1x125-mL G/P	Carbon-14	None
B1B3V4		W			4x1000-mL G/P	Iodine-129	None
B1B3V4		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE <i>[Signature]</i>		Date/Time <i>1403 SEP 15 2004</i>	Received By <i>Fal Ex</i>		Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Limb SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By <i>Fred Ex</i>		Date/Time <i>9/16/04 10:25</i>	Received By <i>Fred Sarao</i>		Date/Time <i>9/16/04 3:15</i>			
Relinquished By <i>Fred Sarao</i>		Date/Time <i>9/17/04 3:00</i>	Received By <i>Fred Ex</i>		Date/Time <i>9/17/04</i>			
Relinquished By <i>Fred Ex</i>		Date/Time <i>9-18-04 1005</i>	Received By <i>[Signature]</i>		Date/Time <i>9-18-04 1005</i>			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)					Disposed By	Date/Time

PNNL

SDG# H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-5

Page 1 of 2

Collector **R.T. SICKLE**Contact/Requester
Dot StewartTelephone No. MSIN FAX
509-376-5056SAF No.
B04-002Sampling Origin *Hanford Site*

Purchase Order/Charge Code

Project Title
ERDE SEPT 2004*DTS - SAMS - HRY*Ice Chest No. *ERC-99.058* Temp.Shipped To (Lab)
TMA/RECRAMethod of Shipment
Govt TruckBill of Lading/Air Bill No. *7920 0958 2480*Protocol
CERCLA

Priority: 45 Days

Onsite Property No. *29-15-04 PTR 14126*POSSIBLE SAMPLE HAZARDS/REMARKS
.. ..

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes ☒ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V5 (F)		W	<i>9-15-04</i>	<i>0800</i>	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V6		W			<i>522</i> 1x200-mL G/P <i>9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V6		W			1x500-mL G/P <i>300 9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x20-mL P	Activity Scan	None
B1B3V6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V6		W			1x125-mL G/P	Carbon-14	None
B1B3V6		W			4x1000-mL G/P	Iodine-129	None
B1B3V6		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>SEP 15 2004</i>	Received By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>9/16/04</i>	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By Fel Ex			Date/Time <i>9/16/04 10:25</i>	Received By Fred Sarao			Date/Time <i>9/16/04 3:45</i>			
Relinquished By Fred Sarao			Date/Time <i>9/17/04 3:00 pm</i>	Received By Fel Ex			Date/Time <i>9/17/04</i>			
Relinquished By Fel Ex			Date/Time <i>9-18-04 1005</i>	Received By V. H. [Signature]			Date/Time <i>9-18-04 1005</i>			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)							Disposed By	Date/Time

PNNL
SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **B04-002-5**

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Page 2 of 2

FAX

DU-002				
1	2	3	4	5

Dot Stewart		
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509-376-5056

FAX[illegible]

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *	
R.T. SICKLE			SEP 18 2004	Fel Ex					
Fel Ex			9/16/04 10:25	Fred Sarao			9/16/04 3:45	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air	DS = Drum Solid DL = Drum Liquid T = Tissue WI = Wine L = Liquid V = Vegetation X = Other
Fred Sarao			9/17/04 3:23pm	Fel Ex			9/17/04		
Fel Ex			9-18-04 1005	P. Hunsaul			9-18-04 1005		
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		
							Date/Time		

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-6	
						Page 1 of 2	
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. 509-376-5056		MSIN FAX	
SAF No. B04-002		Sampling Origin Hanford Site		Purchase Order/Charge Code			
Project Title ERDF SEPT 2004		DT3-SAWS-148Y		Ice Chest No. ERC-99-058		Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7920 0958 2480			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T5 (F)		W	9-15-04	1044	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T6		W			1x500-mL G/P 29-15-04	Alkalinity - 310.1	Cool 4C
B1B3T6		W			1x800-mL G/P 500 29-15-04	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x20-mL P	Activity Scan	None
B1B3T6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T6		W			1x125-mL G/P	Carbon-14	None
B1B3T6		W			4x1000-mL G/P	Iodine-129	None
B1B3T6		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE		Date/Time SEP 15 2004		Received By Fel Ex		Date/Time 9/16/04		Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Ex		Date/Time 9/16/04 10:25		Received By Fred Ex		Date/Time 9/16/04 3:45		
Relinquished By Fred Ex		Date/Time 9/17/04 3:00		Received By Fred Ex		Date/Time 9/17/04		
Relinquished By Fred Ex		Date/Time 9-18-04 1005		Received By Fred Ex		Date/Time 9-18-04 1005		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By Date/Time

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PNNL
SDG# H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **B04-002-6**

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FAX

Preservative	HCl to pH <2
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B04-002

Dot Stewart

TELEPHONE NO.
509-376-5056

MSIN FAX

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Date/Time

CITIZENS

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-8	
						Page 1 of 1	
Collector DURATEK F. M. HALL		Contact/Requester DOT STEWART		Telephone No. 509 376 5056		MSIN FAX	
SAF No. B04-002		Sampling Origin NAVFORD SITE		Purchase Order/Charge Code			
Project Title ERDE SEPT 2004		DTS - SHWS H83		Ice Chest No. SNK 510		Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Gov Vehicle		Bill of Lading/Air Bill No. 792090582469			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B440		W	9-15-04	0850	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B440		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By DURATEK F. M. HALL		Print Sign 		Date/Time SEP 15 2004		Received By FED Ex		Print Sign 		Date/Time 9/16/04 3:15 pm		Matrix * S = Soil DS = Drum Solid SF = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By FED Ex		Date/Time 9/16/04 10:25		Received By 		Date/Time 9/16/04 3:15 pm							
Relinquished By 		Date/Time 9/17/04 3:03		Received By FED Ex		Date/Time 9/17/04							
Relinquished By FED Ex		Date/Time 9-18-04 1115		Received By 		Date/Time 9-18-04 1115							
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By		Date/Time			

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PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-9	
						Page 1 of 1	
Collector R.T. SICKLE		Contact/Requester		Telephone No.		MSIN FAX	
SAF No. B04-002		Sampling Origin <i>Hanford site</i>		Purchase Order/Charge Code <i>7920</i>			
Project Title ERDE SEPT 2004		DTS-SAWS-H8Y		Ice Chest No. <i>ERC-99-058</i> Temp.			
Shipped To (Lab) TMA/RECRA		Method of Shipment		Bill of Lading/Air Bill No. <i>7920 0958 2480</i>			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B441		W	9.15.04	0800	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B441		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By R.T. SICKLE <i>[Signature]</i>		Date/Time <i>9/15/04</i>	Received By <i>Fred Ex</i>		Date/Time	Matrix * S - Soil DS - Drum Solid SE - Sediment DL - Drum Liquid SO - Solid T - Tissue SL - Sludge WI - Wine W - Water L - Liquid O - Oil V - Vegetation A - Air X - Other
Relinquished By <i>Fred Ex</i>		Date/Time <i>9/16/04 10:25</i>	Received By <i>Fred Sarao</i>		Date/Time <i>9/16/04 3:45</i>	
Relinquished By <i>Fred Sarao</i>		Date/Time <i>9/17/04 3:30</i>	Received By <i>Fred Ex</i>		Date/Time <i>9/17/04</i>	
Relinquished By <i>Fred Ex</i>		Date/Time <i>9-18-04 1115</i>	Received By <i>[Signature]</i>		Date/Time <i>9-18-04 1115</i>	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)				

PNNL
SDG-1 H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #	B04-002-10
Page	1 of 1

Page 1 of 1

Page	1	of	1
N	FAX		

SAF No. B04-002

Sampling Origin	Hanford site
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Purchase Order/Charge Code	
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Project Title	ERDE SEPT 2004
---------------	----------------

DTS - SAWH - HSY

Ice Chest No.	5101 226	Temp.
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Shipped To (Lab) TMA/RCRA

Method of Shipment	
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Bill of Lading/Air Bill No. 7030 9055 3401

TMA/RCRA
Protocol

Office Property No. 7420 7020 2491

CERCLA

Priority: 45 Days

OFFICIAL FIDELITY NO.

• •

SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Total Activity Exemption: Yes ☒ No ☐[illegible]

Print _____ Sign _____

P 1 5 2004

Fail ex

100

10

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liquid
SO	= Solid	T	= Tissue
SL	= Sludge	W	= Wine
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

ed By F2

9/16/04	10:25
---------	-------

Received By *Fr*
Ind Sam

Fred Sarason 9/16/

9/16/04 2:15

ed By

9/17/04	Date/Time
	2:00

Received By Fed E

Fed E

Date/Time 9/11/04

Feb 20

	Date/Time
9-18-04	100

Received By *P. H. [Signature]*

and

3-18-04 1005

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

	Disposed By	Date/Time
80-1679	[Signature]	11/1/80

Disposition	Disposition Date	Disposition By	Date/Time
10/1/2010	10/1/2010	10/1/2010	10/1/2010

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-1

Page 1 of 2

888888833

Collector **R.T. SICKLE**

Contact/Requester

Dot Stewart

Telephone No.

MSIN

FAX

509-376-5056

Sampling Origin

Mayford site

Purchase Order/Charge Code

SAF No.

B04-002

Project Title

ERDE SEPT 2004

Method of Shipment

Govt Truck

Ice Chest No.

Temp.

Bill of Lading/Air Bill No.

7927 3263 8185

Shipped To (Lab)

ITMA/RECRA

Protocol

CERCLA

Priority: 45 Days

Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS

.. ..

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes ☒ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type/Container	Sample Analysis	Preservative
B1B3T7 (F)		W	9-16-04	0833	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T8		W			1x200-mL G/P 500 P/P	Alkalinity - 310.1	Cool 4C
B1B3T8		W			1x200-mL G/P 500 P/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x20-mL P	Activity Scan	None
B1B3T8		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T8		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T8		W			1x125-mL G/P	Carbon-14	None
B1B3T8		W			4x1000-mL G/P	Iodine-129	None
B1B3T8		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE	Date/Time SEP 16 2004	Received By Fred Ex	Date/Time 9/17/04 9:10	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liner SO = Solid T = Tissue SL = Sludge W = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Ex	Date/Time 9/17/04 9:10	Received By Fred Ex	Date/Time 9/17/04 10:35	
Relinquished By Fred Ex	Date/Time 9/17/04 3:30	Received By Fred Ex	Date/Time 9/17/04	
Relinquished By Fred Ex	Date/Time 9-18-04 1005	Received By Fred Ex	Date/Time 9-18-04 1005	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		
		Disposed By Fred Ex		
		Date/Time 9-18-04 1005		

PNNL
SDG& H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 2 of 2

FAX

FAX

~~30505506~~

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	R.T. SICKLE	<i>[Signature]</i>	SEP 16 2004	Received By	Fred Ex			S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solid DL = Drum Liquid T = Tissue WI = Wine L = Liquid V = Vegetation X = Other
Relinquished By	Fred Ex	<i>[Signature]</i>	9/17/04 9:10	Received By	Fred Sarao	<i>[Signature]</i>	9/17/04 10:35	
Relinquished By	Fred Sarao	<i>[Signature]</i>	9/17/04 3:10	Received By	Fred Ex	<i>[Signature]</i>	9/17/04	
Relinquished By	Fred Ex	<i>[Signature]</i>	9-18-04 1005	Received By	V-Hung	<i>[Signature]</i>	9-18-04 1005	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time	

PNNL
SDR # 142724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # B04-002-7

Page 1 of 1

Collector **R.T. SICKLE**

Contact/Requester	Dot Stewart
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Telephone No.	MSIN	FAX
509 376-5056		

SAF No. B04-002

Sampling Origin	Hanford site
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Purchase Order/Charge Code	
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Project Title
ERDF SEPT 2004

DTS-5725-APY

Ice Chest No. 5M2 550 Temp. _____

Shipped To (Lab)

Method of Shipment Govt Truck

Bill of Lading/Air Bill No. 7927 3263 8185

TMA/RECBA

Protocol

CERCLA

Priority: 45 Days

Offsite Property No. 2301

POSSIBLE SAMPLE HAZARDS/REMARKS	
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SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Hold Time	Total Activity Exemptions: Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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Total Activity Exemption: Yes ☒ No ☐

[illegible]

Relinquished By: **R.T. SICKLE** Print *[Signature]* Sign Date/Time: **SEP 16 2004** 17:00

Received By	Print	Sign	Date/Time

Matrix *					
S	=	Soil	DS	=	Drum Solid
SE	=	Sediment	DL	=	Drum Liquid
SO	=	Solid	T	=	Tissue
SL	=	Sludge	WL	=	Wine
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

Relinquished By	SEP 17 2004
Date/Time	
Relinquished By	9/17/04 9:10

Received By	Fred Sarao	Date/Time
<i>[Signature]</i>	9/17/24	12:35 AM
Received By		Date/Time

Relinquished By	Date/Time
Hand James 9/17/04	3:00

Received By	1/11/15	13:30 PM
	FD Ex	9/17/04
Received By		

Relinquished By	Date/Time
<i>[Signature]</i>	9-18-04 1005

Received By V. H. H. H. Date/Time 9-18-04 1:05

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By	Date/Time
-------------	-----------

Date/Time _____

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU HANFORD*

Date: *9-18-04*

Purchase Order / Project# /

(SAF#) SOW# / Release #: *B04-002*

LvLI Batch # :

0409677

Sample Custodian:

V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped

Carrier

Fed Ex

Airbill#

790276492076
L 2102

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp

2.5
2.4 °C

Cooler #

SML 510
ERC 99058

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☐ Yes

☒ No

Ice Analysis

13. VOA, TOC, TOX free of headspace?

☐ Yes

☒ No

☐ NIA

Headspace

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☐ Yes

☒ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☒ Yes

☐ No

☐ No

Discrepancies



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B1B3T9

ARSENIC, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
ARSENIC, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, SOLUBLE	001	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, SOLUBLE	001 REP	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3V0

ARSENIC, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
ARSENIC, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	002	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	002 MS	W	04L0629	09/15/04	10/13/04	10/13/04

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1B3V1						
ARSENIC, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, SOLUBLE	003	W	04L0629	09/15/04	10/13/04	10/13/04
B1B3V2						
ARSENIC, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	004	W	04L0629	09/15/04	10/13/04	10/13/04
B1B3V3						
ARSENIC, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, SOLUBLE	005	W	04L0629	09/15/04	10/13/04	10/13/04
B1B3V4						
ARSENIC, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	006	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3V5

ARSENIC, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, SOLUBLE	007	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3V6

ARSENIC, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	008	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3T5

ARSENIC, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, SOLUBLE	009	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3T6

ARSENIC, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
BARIUM, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
CHROMIUM, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
LEAD, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
SELENIUM, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
TIN, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
VANADIUM, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04
ZINC, TOTAL	010	W	04L0629	09/15/04	10/13/04	10/13/04

B1B3T7

ARSENIC, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
BARIUM, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
CHROMIUM, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
LEAD, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
SELENIUM, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
TIN, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
VANADIUM, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04
ZINC, SOLUBLE	014	W	04L0629	09/16/04	10/13/04	10/13/04

B1B3T8

ARSENIC, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
BARIUM, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
CHROMIUM, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
LEAD, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
SELENIUM, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
TIN, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
VANADIUM, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04
ZINC, TOTAL	015	W	04L0629	09/16/04	10/13/04	10/13/04

LAB QC:

ARSENIC LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
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ARSENIC

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
BARIUM LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
BARIUM, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
CHROMIUM LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
CHROMIUM, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
LEAD LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
LEAD, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
SELENIUM LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
SELENIUM, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
TIN LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
TIN, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
VANADIUM LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
VANADIUM, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04
ZINC LABORATORY	LC1 BS	W	04L0629	N/A	10/13/04	10/13/04
ZINC, TOTAL	MB1	W	04L0629	N/A	10/13/04	10/13/04

00000000



Analytical Report

Client: TNU-HANFORD B03-018
LVL#: 0409L677
SDG/SAF#: H2724/B03-018

W.O.#: 11343-606-001-9999-00
Date Received: 09-18-04

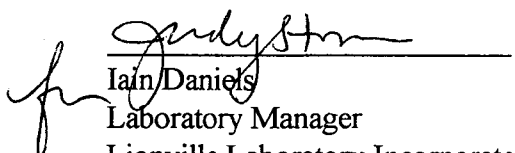
METALS CASE NARRATIVE

1. This narrative covers the analyses of 12 water samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. The preparation/method blank for 1 analyte was outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
 - a). The MB result for Zinc was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and samples B1B3V3, B1B3V4, B1B3V5, B1B3V6, B1B3T5, B1B3T6, B1B3T7, and B1B3T8 each read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 35 pages.

Inorganics Accuracy Report.

11. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated
jjw/m09-677

10/19/07
Date



METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Lot#: 0409L677

Leaching Procedure: 1310 1311 1312 Other:

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: X3005A 3010A 3015 3020A 3050B 3051 200.7 SS17
Other:

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010B</u> <u>7041⁵</u>	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>X6010B</u> <u>7060A⁵</u>	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>X6010B</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010B</u> <u>7131A⁵</u>	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>X6010B</u> <u>7191⁵</u>	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010B</u> <u>7211⁵</u>	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<u>X6010B</u> <u>7421⁵</u>	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010B</u> <u>7430⁴</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A³</u> <u>7471A³</u>	<u>245.1²</u> <u>245.5²</u>			<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610⁴</u>	<u>200.7</u> <u>258.1⁴</u>			<u>99</u>
Rare Earths	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Selenium	<u>X6010B</u> <u>7740⁵</u>	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010B¹</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010B</u> <u>7761⁵</u>	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010B</u> <u>7770⁴</u>	<u>200.7</u> <u>273.1⁴</u>			<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010B</u> <u>7841⁵</u>	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>X6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Vanadium	<u>X6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>X6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-W1-033/N-04/98

RECEIVED

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B1B3T9	Arsenic, Soluble	3.7	UG/L	3.6	1.0
		Barium, Soluble	56.3	UG/L	0.20	1.0
		Chromium, Soluble	5.5	UG/L	0.60	1.0
		Lead, Soluble	1.9 u	UG/L	1.9	1.0
		Selenium, Soluble	3.9 u	UG/L	3.9	1.0
		Tin, Soluble	4.0 u	UG/L	4.0	1.0
		Vanadium, Soluble	25.4	UG/L	0.60	1.0
		Zinc, Soluble	288	UG/L	0.40	1.0
-002	B1B3V0	Arsenic, Total	3.6 u	UG/L	3.6	1.0
		Barium, Total	58.3	UG/L	0.20	1.0
		Chromium, Total	4.8	UG/L	0.60	1.0
		Lead, Total	1.9 u	UG/L	1.9	1.0
		Selenium, Total	3.9 u	UG/L	3.9	1.0
		Tin, Total	4.0 u	UG/L	4.0	1.0
		Vanadium, Total	26.7	UG/L	0.60	1.0
		Zinc, Total	391	UG/L	0.40	1.0
-003	B1B3V1	Arsenic, Soluble	3.6 u	UG/L	3.6	1.0
		Barium, Soluble	57.2	UG/L	0.20	1.0
		Chromium, Soluble	5.3	UG/L	0.60	1.0
		Lead, Soluble	1.9 u	UG/L	1.9	1.0
		Selenium, Soluble	3.9 u	UG/L	3.9	1.0
		Tin, Soluble	4.0 u	UG/L	4.0	1.0
		Vanadium, Soluble	25.2	UG/L	0.60	1.0
		Zinc, Soluble	286	UG/L	0.40	1.0
-004	B1B3V2	Arsenic, Total	3.6 u	UG/L	3.6	1.0
		Barium, Total	61.2	UG/L	0.20	1.0
		Chromium, Total	5.1	UG/L	0.60	1.0
		Lead, Total	1.9 u	UG/L	1.9	1.0
		Selenium, Total	5.7	UG/L	3.9	1.0
		Tin, Total	4.0 u	UG/L	4.0	1.0
		Vanadium, Total	27.0	UG/L	0.60	1.0
		Zinc, Total	381	UG/L	0.40	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-005	B1B3V3	Arsenic, Soluble	3.6	u UG/L	3.6	1.0
		Barium, Soluble	60.9	UG/L	0.20	1.0
		Chromium, Soluble	3.8	UG/L	0.60	1.0
		Lead, Soluble	1.9	u UG/L	1.9	1.0
		Selenium, Soluble	3.9	u UG/L	3.9	1.0
		Tin, Soluble	4.0	u UG/L	4.0	1.0
		Vanadium, Soluble	26.1	UG/L	0.60	1.0
		Zinc, Soluble	7.3	UG/L	0.40	1.0
-006	B1B3V4	Arsenic, Total	3.6	u UG/L	3.6	1.0
		Barium, Total	62.1	UG/L	0.20	1.0
		Chromium, Total	27.6	UG/L	0.60	1.0
		Lead, Total	1.9	u UG/L	1.9	1.0
		Selenium, Total	4.6	UG/L	3.9	1.0
		Tin, Total	4.0	u UG/L	4.0	1.0
		Vanadium, Total	26.8	UG/L	0.60	1.0
		Zinc, Total	3.1	UG/L	0.40	1.0
-007	B1B3V5	Arsenic, Soluble	3.6	u UG/L	3.6	1.0
		Barium, Soluble	1.0	UG/L	0.20	1.0
		Chromium, Soluble	0.60	u UG/L	0.60	1.0
		Lead, Soluble	1.9	u UG/L	1.9	1.0
		Selenium, Soluble	3.9	u UG/L	3.9	1.0
		Tin, Soluble	4.0	u UG/L	4.0	1.0
		Vanadium, Soluble	0.60	u UG/L	0.60	1.0
		Zinc, Soluble	8.0	UG/L	0.40	1.0
-008	B1B3V6	Arsenic, Total	3.6	u UG/L	3.6	1.0
		Barium, Total	0.67	UG/L	0.20	1.0
		Chromium, Total	0.60	u UG/L	0.60	1.0
		Lead, Total	1.9	u UG/L	1.9	1.0
		Selenium, Total	3.9	u UG/L	3.9	1.0
		Tin, Total	4.0	u UG/L	4.0	1.0
		Vanadium, Total	0.60	u UG/L	0.60	1.0
		Zinc, Total	34.5	UG/L	0.40	1.0

00000001

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-009	B1B3T5	Arsenic, Soluble	3.6	u UG/L	3.6	1.0
		Barium, Soluble	68.7	UG/L	0.20	1.0
		Chromium, Soluble	11.6	UG/L	0.60	1.0
		Lead, Soluble	1.9	u UG/L	1.9	1.0
		Selenium, Soluble	3.9	u UG/L	3.9	1.0
		Tin, Soluble	4.0	u UG/L	4.0	1.0
		Vanadium, Soluble	24.8	UG/L	0.60	1.0
		Zinc, Soluble	12.8	UG/L	0.40	1.0
-010	B1B3T6	Arsenic, Total	3.6	u UG/L	3.6	1.0
		Barium, Total	68.2	UG/L	0.20	1.0
		Chromium, Total	22.7	UG/L	0.60	1.0
		Lead, Total	1.9	u UG/L	1.9	1.0
		Selenium, Total	3.9	UG/L	3.9	1.0
		Tin, Total	4.0	u UG/L	4.0	1.0
		Vanadium, Total	25.3	UG/L	0.60	1.0
		Zinc, Total	54.5	UG/L	0.40	1.0
-014	B1B3T7	Arsenic, Soluble	3.6	u UG/L	3.6	1.0
		Barium, Soluble	39.9	UG/L	0.20	1.0
		Chromium, Soluble	15.6	UG/L	0.60	1.0
		Lead, Soluble	1.9	u UG/L	1.9	1.0
		Selenium, Soluble	3.9	u UG/L	3.9	1.0
		Tin, Soluble	4.0	u UG/L	4.0	1.0
		Vanadium, Soluble	27.0	UG/L	0.60	1.0
		Zinc, Soluble	6.9	UG/L	0.40	1.0
-015	B1B3T8	Arsenic, Total	3.6	u UG/L	3.6	1.0
		Barium, Total	39.2	UG/L	0.20	1.0
		Chromium, Total	19.3	UG/L	0.60	1.0
		Lead, Total	1.9	u UG/L	1.9	1.0
		Selenium, Total	3.9	u UG/L	3.9	1.0
		Tin, Total	4.0	u UG/L	4.0	1.0
		Vanadium, Total	27.1	UG/L	0.60	1.0
		Zinc, Total	25.0	UG/L	0.40	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/18/04

CLIENT: TNUHANFORD B03-018 H2724
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L677

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	04L0629-MB1	Arsenic, Total	3.6	u UG/L	3.6	1.0
		Barium, Total	0.39	UG/L	0.20	1.0
		Chromium, Total	0.60	u UG/L	0.60	1.0
		Lead, Total	1.9	u UG/L	1.9	1.0
		Selenium, Total	3.9	u UG/L	3.9	1.0
		Tin, Total	4.0	u UG/L	4.0	1.0
		Vanadium, Total	0.60	u UG/L	0.60	1.0
		Zinc, Total	5.8	UG/L	0.40	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-002	B1B3V0	Arsenic, Total	1980	3.6 u	2000	98.9	1.0
		Barium, Total	2040	58.3	2000	99.1	1.0
		Chromium, Total	200	4.8	200	97.4	1.0
		Lead, Total	485	1.9 u	500	96.9	1.0
		Selenium, Total	2000	3.9 u	2000	100.0	1.0
		Tin, Total	986	4.0 u	1000	98.6	1.0
		Vanadium, Total	507	26.7	500	96.1	1.0
		Zinc, Total	865	391	500	94.9	1.0

Lionville Laboratory, Int.

INORGANICS PRECISION REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====
-001REP	B1B3T9	Arsenic, Soluble	3.7	3.6 u	1.0
		Barium, Soluble	56.3	56.1	1.0
		Chromium, Soluble	5.5	2.8	1.0
		Lead, Soluble	1.9 u	1.9 u	1.0
		Selenium, Soluble	3.9 u	3.9 u	1.0
		Tin, Soluble	4.0 u	4.0 u	1.0
		Vanadium, Soluble	25.4	25.5	1.0
		Zinc, Soluble	288	312	1.0

Handwritten notes:
 - Next to Barium, Soluble: ~~NC~~ 200
 - Next to Chromium, Soluble: 65.1
 - Next to Lead, Soluble: 10/18/04

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/18/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
=====	=====	=====	=====	=====	=====	=====
LCS1	04L0629-LC1	Arsenic, LCS	1950	2000	UG/L	97.6
		Barium, LCS	1930	2000	UG/L	96.6
		Chromium, LCS	197	200	UG/L	98.4
		Lead, LCS	493	500	UG/L	98.6
		Selenium, LCS	2010	2000	UG/L	100.6
		Tin, LCS	992	1000	UG/L	99.2
		Vanadium, LCS	480	500	UG/L	96.0
		Zinc, LCS	496	500	UG/L	99.2



04109L 677

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU HANFORD SAF# ~~B04-002~~ B03-018

Est. Final Proj. Sampling Date _____

Project # 11343-606-001-9999-00

Project Contact/Phone # _____

Lionville Laboratory Project Manager DS

QC Spec Del Std TAT 30 Days

Refrigerator #

#/Type Container

Volume

Preservatives

ANALYSES REQUESTED →

ORGANIC

VOA

BNA

Pest/PCB

Herb

Lionville Laboratory Use Only

MATRIX CODES:

S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum
DL - Drum
L - EP/TCLP
Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only																		
		MS	MSD				H7C00								MEQSO	MEQTO		ICD	TALKL	IN3N2	ITDS	ITOX			
001	B1B3T9 (F)			W	7-15-04	1102											1	✓	JP 9/12/04						
002	V0						3											1	✓	JP 9/12/04					
003	V1 (F)																1	✓	JP 9/12/04						
004	V2						3											1	✓	JP 9/12/04					
005	V3 (F)					0914											1	✓	JP 9/12/04						
006	V4						3											1	✓	JP 9/12/04					
007	V5 (F)					0800											1	✓	JP 9/12/04						
008	V6						3											1	✓	JP 9/12/04					
009	T5 (F)					1044											1	✓	JP 9/12/04						
010	T6						3											1	✓	JP 9/12/04					

Special Instructions: Run matrix QC

DATE/REVISIONS:

10/4/04 1. Per client/PM, SAF# = B03-018

2. _____

3. _____

4. _____

5. _____

6. _____

MEQ = As, Ba, Cr, Pb, Se, Sn, V, Zn

ICD = CL, FL, BR, NO₂, NO₃, SO₄, PO₄

Lionville Laboratory Use Only

Samples were:

1) Shipped _____ or
Hand Delivered _____
Airbill # _____

2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was:

1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N

4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Cooler Temp. _____ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
<u>Fred E</u>	<u>V. H. H.</u>	<u>9-18-04</u>	<u>1005</u>
<u>L</u>	<u>L</u>	<u>L</u>	<u>1115</u>

Relinquished by	Received by	Date	Time
<u>"COMPOSITE WASTE"</u>	<u>ORIGINAL</u>		
	<u>REWRITTEN</u>		

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

100

—

Relinquished by	Received by	Date	Time

PNNL SDG# H2724	<h2 style="margin:0;">CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</h2>	C.O.C. # <div style="text-align: center; font-weight: bold; font-size: 1.2em;">B04-002-2</div>
		Page 1 of 2

Collector DURATEK F.M. HALL	Contact/Requester Dot Stewart	Telephone No. 509-376-5056 MSIN FAX
SAF No. B04-002	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title ERDF SEPT 2004	DTS - SAWS H83	Ice Chest No. SML 510 Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7920 9058 2469
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T9 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V0		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V0		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x20-mL P	Activity Scan	None
B1B3V0		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V0		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V0		W			1x125-mL G/P	Carbon-14	None
B1B3V0		W			4x1000-mL G/P	Iodine-129	None
B1B3V0		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEK F.M. HALL	Print 	Sign 	Date/Time SEP 15 2004	Received By FED EX	Print Fred Sara	Sign 	Date/Time 9/16/04 3:15 pm	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By 	Date/Time 9/16/04 12:25	Received By 	Date/Time 9/16/04 3:15 pm					
Relinquished By Fred Sara	Date/Time 9/17/04 3:00 pm	Received By Fred Sara	Date/Time 9/17/04					
Relinquished By 	Date/Time 9-18-04 1115	Received By 	Date/Time 9-18-04 1115					
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By 	Date/Time

PNNL

SDa # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **B04-002-2**

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SAF No. B04-002

Contact/Requestor
Dot Stewart

Telephone No.	MSIN	FAX
500 376 5056		

[illegible]

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *	
Relinquished By	DURATEK F. M. HALL	<i>[Signature]</i>	SEP 15 2004	Received By	FED Ex			S = Soil	DS = Drum Solid
Relinquished By			Date/Time	Received By	Fred Sarao		Date/Time	SE = Sediment	DL = Drum Liquid
Relinquished By	FED Ex		9/16/04 10:25	Received By	<i>[Signature]</i>		9/16/04 3:15 pm	SO = Solid	T = Tissue
Relinquished By			Date/Time	Received By			Date/Time	SL = Sludge	WL = Wine
Relinquished By	Fred Sarao		9/17/04 3:00	Received By	FED Ex		9/17/04	W = Water	L = Liquid
Relinquished By			Date/Time	Received By			Date/Time	O = Oil	V = Vegetation
Relinquished By	FED Ex		9/18/04 1115	Received By	<i>[Signature]</i>		9-18-04 1115	A = Air	X = Other
Relinquished By			Date/Time	Received By			Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)					Disposed By		Date/Time

PNNL

SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-3

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Collector DURATEX F. M. HALL	Contact/Requester Dot Stewart	Telephone No. 509-376-5056	MSIN FAX
SAF No. B04-002	Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title ERDF SEPT 2004	DTS - SAWS H B3	Ice Chest No. SMIL 510	Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 792090582469	
Protocol CERCLA	Priority: 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

.. ..

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes ☒ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V1 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V2		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V2		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x20-mL P	Activity Scan	None
B1B3V2		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V2		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V2		W			1x125-mL G/P	Carbon-14	None
B1B3V2		W			4x1000-mL G/P	Iodine-129	None
B1B3V2		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEX F. M. HALL	Print <i>F. M. Hall</i>	Sign <i>F. M. Hall</i>	Date/Time SEP 15 2004 1400	Received By FED EX	Print <i>Fred Sarav</i>	Sign <i>Fred Sarav</i>	Date/Time 9/16/04 10:25	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge W1 = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>Fred Sarav</i>	Date/Time 9/16/04 10:25	Received By <i>Fred Sarav</i>	Date/Time 9/16/04 3:15					
Relinquished By <i>Fred Sarav</i>	Date/Time 9/17/04 3:00	Received By <i>Fred Sarav</i>	Date/Time 9/17/04					
Relinquished By <i>Fred Sarav</i>	Date/Time 9-18-04 1115	Received By <i>V. Hernandez</i>	Date/Time 9-18-04 1115					
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		

[illegible]

PNNL <i>SDG# H2724</i>		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-4	
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. MSIN FAX 509-376-5056		Page 1 of 2	
SAF No. B04-002		Sampling Origin <i>Hanford Site</i>		Purchase Order/Charge Code			
Project Title ERDF SEPT 2004		<i>DTs - Saws - 1484</i>		Ice Chest No. <i>SMT 226</i> Temp.			
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. <i>7920 9058 2491</i>			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS			
				Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V3 (F)		W	<i>9-15-04</i>	<i>0914</i>	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V4		W			<i>1x500-mL G/P</i> <i>9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V4		W			<i>1x200-mL G/P</i> <i>9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x20-mL P	Activity Scan	None
B1B3V4		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V4		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V4		W			1x125-mL G/P	Carbon-14	None
B1B3V4		W			4x1000-mL G/P	Iodine-129	None
B1B3V4		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE Print Sign		Date/Time <i>1403</i> SEP 15 2004		Received By <i>Fal Ex</i> Print Sign		Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By <i>Fred Sarao</i>		Date/Time <i>9/16/04 10:25</i>		Received By <i>Fred Sarao</i>		Date/Time <i>9/16/04 24:15</i>			
Relinquished By <i>Fred Sarao</i>		Date/Time <i>9/17/04 3:00</i>		Received By <i>Fred Ex</i>		Date/Time <i>9/17/04</i>			
Relinquished By <i>Fred Ex</i>		Date/Time <i>9-18-04 1005</i>		Received By <i>N. Hernandez</i>		Date/Time <i>9-18-04 1005</i>			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	
								Date/Time	

PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # B04-002-4
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PNNL

SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-5

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Collector R.T. SICKLE	Contact/Requester Dot Stewart	Telephone No. 509-376-5056	MSIN FAX
SAF No. B04-002	Sampling Origin <i>Hanford Site</i>	Purchase Order/Charge Code	
Project Title ERDF SEPT 2004	<i>DTS - SAMS - HSY</i>	Ice Chest No. <i>ERC-99-058</i> Temp.	
Shipped To (Lab) TMA/RECRA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. <i>7920 0438 2480</i>	
Protocol CERCLA	Priority: 45 Days	Offsite Property No. <i>2-9-15-04 PTR 14126</i>	
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V5 (F)		W	<i>9-15-04</i>	<i>0800</i>	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V6		W			<i>1x200-mL G/P</i> <i>9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V6		W			<i>1x300-mL G/P</i> <i>300 9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x20-mL P	Activity Scan	None
B1B3V6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V6		W			1x125-mL G/P	Carbon-14	None
B1B3V6		W			4x1000-mL G/P	Iodine-129	None
B1B3V6		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>400</i> SEP 15 2004	Received By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>[Signature]</i>	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solid DL = Drum Liquid T = Tissue WI = Wine L = Liquid V = Vegetation X = Other
Relinquished By Fel Ex	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9/16/04 10:25</i>	Received By Fred Sarao	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9/16/04 3:45</i>	
Relinquished By Fred Sarao	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9/17/04 3:00 pm</i>	Received By Fel Ex	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9/17/04</i>	
Relinquished By Fel Ex	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9-18-04 1005</i>	Received By V. H. [Signature]	<i>[Signature]</i>	<i>[Signature]</i>	Date/Time <i>9-18-04 1005</i>	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

PNNL

SDG# H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-6

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Collector R.T. SICKLE	Contact/Requester Dot Stewart	Telephone No. 509-376-5056	MSIN FAX
SAF No. B04-002	Sampling Origin Hanford Site	Purchase Order/Charge Code	
Project Title ERDF SEPT 2004	ITS-SAWS-HBY	Ice Chest No. ERC-99-058	Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7920 0958 2480	
Protocol CERCLA	Priority: 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes ☒ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T5 (F)		W	9-15-04	1044	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T6		W			1x200-mL G/P 29-15-04	Alkalinity - 310.1	Cool 4C
B1B3T6		W			1x800-mL G/P 500 29-15-04	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T6		W			1x20-mL P	Activity Scan	None
B1B3T6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T6		W			1x125-mL G/P	Carbon-14	None
B1B3T6		W			4x1000-mL G/P	Iodine-129	None
B1B3T6		W			2x1000-mL G/P	Radium -228	HNO3 to pH <2

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 14/03	Received By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 15 2004	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9/16/04 10:25	Received By Fred Davis	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9/16/04 3:45		
Relinquished By Fred Davis	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9/17/04 3:00	Received By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9/17/04		
Relinquished By Fel Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9-18-04 1005	Received By T. H. H. H.	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9-18-04 1005		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

PNNL

SDG# H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **B04-002-6**

Page **2** of **2**

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FAX

FAX[illegible]

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 15 2004	Received By <i>Fal Ex</i>	Print	Sign	Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Shards WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>Fed Ex</i>	Date/Time 9/16/04 10:25	Received By <i>Fred Sarao</i>	Date/Time 9/16/04 3:45					
Relinquished By <i>Fred Sarao</i>	Date/Time 9/17/04 3:00pm	Received By <i>Fed Ex</i>	Date/Time 9/17/04					
Relinquished By <i>Fed Ex</i>	Date/Time 9-18/04 1005	Received By <i>[Signature]</i>	Date/Time 9-18-04 1005					
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

[illegible]

PNNL SDG # H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # B04-002-9	
Collector R.T. SICKLE			Contact/Requester			Telephone No. MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford site			Purchase Order/Charge Code 7920		
Project Title ERDE SEPT 2004			DTS-SAWS-HFY			Ice Chest No. ERC-99-058 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment			Bill of Lading/Air Bill No. 7920 0958 2480		
Protocol CERCLA			Priority: 45 Days			Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS						SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis Preservative		
B1B441		W	9-15-04	0800	3x40-mL aGs*	VOA - 8280A (TCL) HCl or H2SO4 to pH <2 Cool 4C		
B1B441		W	↓	↓	1x20-mL P	Activity Scan None		
Relinquished By R.T. SICKLE	Print	Signature	Date/Time SEP 15 2004	Received By Fred Ex	Print	Signature	Date/Time	Matrix *
Relinquished By Fred Ex	Print	Signature	Date/Time 9/16/04 10:25	Received By Fred Sarao	Print	Signature	Date/Time 9/16/04 3:45	S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fred Sarao	Print	Signature	Date/Time 9/17/04 3:00	Received By Fred Ex	Print	Signature	Date/Time 9/17/04	
Relinquished By Fred Ex	Print	Signature	Date/Time 9-18-04 1115	Received By V. Hernandez	Print	Signature	Date/Time 9-18-04 1115	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)							Disposed By Date/Time

[illegible]

PNNL SDA # H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-1	
		Page 1 of 2					
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. 509-376-5056		MSIN FAX	
SAF No. B04-002		Sampling Origin Harford Site		Purchase Order/Charge Code			
Project Title ERDE SEPT 2004		DTG-SAWS-H84		Ice Chest No. 5M L 556		Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. 7927 3263 8185			
Protocol CERCLA		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS			
				Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T7 (F)		W	9-16-04	0833	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T8		W			1x200-mL G/P 500 mL	Alkalinity - 310.1	Cool 4C
B1B3T8		W			1x200-mL G/P 500 mL	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x20-mL P	Activity Scan	None
B1B3T8		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T8		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T8		W			1x125-mL G/P	Carbon-14	None
B1B3T8		W			4x1000-mL G/P	Iodine-129	None
B1B3T8		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE		Date/Time SEP 16 2004	Received By Fed Ex	Print	Sign	Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water I = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fed Ex		Date/Time 9/17/04 9:10	Received By Fred Sanao			Date/Time 9/17/04 10:35	
Relinquished By Fred Sanao		Date/Time 9/17/04 3:30	Received By Fed Ex			Date/Time 9/17/04	
Relinquished By Fed Ex		Date/Time 9-18-04 1005	Received By R.T. Sickle			Date/Time 9-18-04 1005	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)					
		Disposed By					
		Date/Time					

SDG# 142724

C.O.C. #

B04-002-1

Page 2 of 2

MSIN**FAX**

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
Relinquished By	R.T. SICKLE	<i>[Signature]</i>	SEP 16 2004	Received By	Fred Ex			
Relinquished By	Fred Ex	<i>[Signature]</i>	9/17/04 9:10	Received By	Fred Sarno	<i>[Signature]</i>	9/17/04 11:35	S = Soil SF = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solid DL = Drum Liquid T = Tissue WL = Wine L = Liquid V = Vegetation X = Other
Relinquished By	Fred Sarno	<i>[Signature]</i>	9/17/04 3:00	Received By	Fred Ex	<i>[Signature]</i>	9/17/04	
Relinquished By	Fred Ex	<i>[Signature]</i>	9-18-04 1005	Received By	<i>[Signature]</i>	<i>[Signature]</i>	9-18-04 1005	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

PNNL SDG # 142724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		05 C.O.C. # B04-002-7	
				Page 1 of 1	
Collector R.T. SICKLE		Contact/Requester <i>Dot Steward</i>		Telephone No. <i>509 376-5056</i> MSIN FAX	
SAF No. B04-002		Sampling Origin <i>Hanford site</i>		Purchase Order/Charge Code	
Project Title ERDE SEPT 2004		<i>DTS-SAWI-HBY</i>		Ice Chest No. <i>5ML 550</i> Temp.	
Shipped To (Lab) TMA/RECR		Method of Shipment <i>Govt Truck</i>		Bill of Lading/Air Bill No. <i>7927 3263 8185</i>	
Protocol CERCLA		Priority: 45 Days		Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B439		W	<i>9-16-04</i>	<i>0730</i>	3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B439		W	<i>↓</i>	<i>↓</i>	1x20-mL P	Activity Scan	None

Relinquished By R.T. SICKLE <i>[Signature]</i> Date/Time <i>SEP 16 2004</i>		Received By <i>Fred Ex</i> Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By <i>Fred Ex</i> Date/Time <i>9/17/04 9:10</i>		Received By <i>Fred Sarao</i> Date/Time <i>9/17/04 12:35 AM</i>			
Relinquished By <i>Fred Sarao</i> Date/Time <i>9/17/04 3:00</i>		Received By <i>Fred Ex</i> Date/Time <i>9/17/04</i>			
Relinquished By <i>Fred Ex</i> Date/Time <i>9-18-04 1005</i>		Received By <i>[Signature]</i> Date/Time <i>9-18-04 1005</i>			
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By	Date/Time

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU HANFORD*

Date: *9-18-04*

Purchase Order / Project# /

(SAF#) SOW# / Release #: *B04-002*

LvLI Batch #: *0409677*

Sample Custodian: *V. Heenan*

NOTE: EXPLAIN ALL DISCREPANCIES

<p>1. Samples Hand Delivered or <u>Shipped</u></p>	Carrier	<i>Fed Ex</i>	Airbill#	<i>790276492076</i> <i>L 2102</i>
<p>2. Custody seals on coolers or shipping container intact, signed and dated?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No Seals	Comments
<p>3. Outside of coolers or shipping containers are free from damage?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>5. Samples received cooled or ambient?</p>	Temp	<i>2.5</i> <i>2.4</i> °C	Cooler #	<i>SML 510</i> <i>ERC 99058</i>
<p>6. Custody seals on sample containers intact, signed and dated?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No Seals	
<p>7. coc signed and dated?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>8. Sample containers are intact?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>9. All samples on coc received? All samples received on coc?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>10. All sample label information matches coc?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>11. Samples properly preserved?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<p>12. Samples received within hold times? Short holds taken to wet lab?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<i>IC ANLWS</i>
<p>13. VOA, TOC, <u>TOX</u> free of headspace?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	<i>Head space</i>
<p>14. QC stickers placed on bottles designated by client?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	
<p>15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
<p>16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No Discrepancies	



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B1B3V0

ALKALINITY	002	W	04LAKB31	09/15/04	09/27/04	09/27/04
BROMIDE BY IC	002	W	04LICB57	09/15/04	09/29/04	09/29/04
BROMIDE BY IC	002 REP	W	04LICB57	09/15/04	09/29/04	09/29/04
BROMIDE BY IC	002 MS	W	04LICB57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	002	W	04LICA57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	002 REP	W	04LICA57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	002 MS	W	04LICA57	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	002	W	04LIC057	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	002 REP	W	04LIC057	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	002 MS	W	04LIC057	09/15/04	09/29/04	09/29/04
NITRITE BY IC	002	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRITE BY IC	002 REP	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRITE BY IC	002 MS	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	002	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	002 REP	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	002 MS	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	002	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	002 REP	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	002 MS	W	04LICB57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	002	W	04LICC57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	002 REP	W	04LICC57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	002 MS	W	04LICC57	09/15/04	09/29/04	09/29/04
NITRATE NITRITE	002	W	04LN3059	09/15/04	10/14/04	10/14/04
NITRATE NITRITE	002 REP	W	04LN3059	09/15/04	10/14/04	10/14/04
NITRATE NITRITE	002 MS	W	04LN3059	09/15/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	002	W	04LSS183	09/15/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	002	W	04LX018	09/15/04	09/21/04	09/21/04

B1B3V2

ALKALINITY	004	W	04LAKB31	09/15/04	09/27/04	09/27/04
BROMIDE BY IC	004	W	04LICB57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	004	W	04LICA57	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	004	W	04LIC057	09/15/04	09/29/04	09/29/04
NITRITE BY IC	004	W	04LICB57	09/15/04	09/29/04	09/29/04

Lionville Laboratory, Inc.
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TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	004	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	004	W	04LICB57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	004	W	04LICC57	09/15/04	09/29/04	09/29/04
NITRATE NITRITE	004	W	04LN3059	09/15/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	004	W	04LSS183	09/15/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	004	W	04LX018	09/15/04	09/21/04	09/21/04

B1B3V4

ALKALINITY	006	W	04LAKB31	09/15/04	09/27/04	09/27/04
BROMIDE BY IC	006	W	04LICB57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	006	W	04LICA57	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	006	W	04LIC057	09/15/04	09/29/04	09/29/04
NITRITE BY IC	006	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	006	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	006	W	04LICB57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	006	W	04LICC57	09/15/04	09/29/04	09/29/04
NITRATE NITRITE	006	W	04LN3059	09/15/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	006	W	04LSS183	09/15/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	006	W	04LX019	09/15/04	09/27/04	09/27/04
TOTAL ORGANIC HALIDE	006 REP	W	04LX019	09/15/04	09/27/04	09/27/04

B1B3V6

ALKALINITY	008	W	04LAKB31	09/15/04	09/27/04	09/27/04
BROMIDE BY IC	008	W	04LICB57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	008	W	04LICA57	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	008	W	04LIC057	09/15/04	09/29/04	09/29/04
NITRITE BY IC	008	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	008	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	008	W	04LICB57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	008	W	04LICC57	09/15/04	09/29/04	09/29/04
NITRATE NITRITE	008	W	04LN3059	09/15/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	008	W	04LSS183	09/15/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	008	W	04LX019	09/15/04	09/27/04	09/27/04
TOTAL ORGANIC HALIDE	008 MS	W	04LX019	09/15/04	09/27/04	09/27/04

B1B3T6

ALKALINITY	010	W	04LAKB31	09/15/04	09/27/04	09/27/04
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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BROMIDE BY IC	010	W	04LICB57	09/15/04	09/29/04	09/29/04
CHLORIDE BY IC	010	W	04LICA57	09/15/04	09/29/04	09/29/04
FLUORIDE BY IC	010	W	04LIC057	09/15/04	09/29/04	09/29/04
NITRITE BY IC	010	W	04LICB57	09/15/04	09/29/04	09/29/04
NITRATE BY IC	010	W	04LICB57	09/15/04	09/29/04	09/29/04
PHOSPHATE BY IC	010	W	04LICB57	09/15/04	09/29/04	09/29/04
SULFATE BY IC	010	W	04LICC57	09/15/04	09/29/04	09/29/04
NITRATE NITRITE	010	W	04LN3059	09/15/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	010	W	04LSS183	09/15/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	010	W	04LX019	09/15/04	09/27/04	09/27/04

B1B3T8

ALKALINITY	015	W	04LAKB31	09/16/04	09/27/04	09/27/04
ALKALINITY	015 REP	W	04LAKB31	09/16/04	09/27/04	09/27/04
BROMIDE BY IC	015	W	04LICB57	09/16/04	09/29/04	09/29/04
CHLORIDE BY IC	015	W	04LICA57	09/16/04	09/29/04	09/29/04
FLUORIDE BY IC	015	W	04LIC057	09/16/04	09/29/04	09/29/04
NITRITE BY IC	015	W	04LICB57	09/16/04	09/29/04	09/29/04
NITRATE BY IC	015	W	04LICB57	09/16/04	09/29/04	09/29/04
PHOSPHATE BY IC	015	W	04LICB57	09/16/04	09/29/04	09/29/04
SULFATE BY IC	015	W	04LICC57	09/16/04	09/29/04	09/29/04
NITRATE NITRITE	015	W	04LN3059	09/16/04	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	015	W	04LSS183	09/16/04	09/22/04	09/22/04
TOTAL DISSOLVED SOLI	015 REP	W	04LSS183	09/16/04	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	015	W	04LX019	09/16/04	09/27/04	09/27/04

LAB QC:

ALKALINITY	MB1	W	04LAKB31	N/A	09/27/04	09/27/04
ALKALINITY	MB1 BS	W	04LAKB31	N/A	09/27/04	09/27/04
ALKALINITY	MB1 BSD	W	04LAKB31	N/A	09/27/04	09/27/04
BROMIDE BY IC	MB1	W	04LICB57	N/A	09/29/04	09/29/04
BROMIDE BY IC	MB1 BS	W	04LICB57	N/A	09/29/04	09/29/04
CHLORIDE BY IC	MB1	W	04LICA57	N/A	09/29/04	09/29/04
CHLORIDE BY IC	MB1 BS	W	04LICA57	N/A	09/29/04	09/29/04
FLUORIDE BY IC	MB1	W	04LIC057	N/A	09/29/04	09/29/04
FLUORIDE BY IC	MB1 BS	W	04LIC057	N/A	09/29/04	09/29/04

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-018 H2724

DATE RECEIVED: 09/18/04

LVL LOT # :0409L677

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	MB1	W	04LICB57	N/A	09/29/04	09/29/04
NITRITE BY IC	MB1 BS	W	04LICB57	N/A	09/29/04	09/29/04
NITRATE BY IC	MB1	W	04LICB57	N/A	09/29/04	09/29/04
NITRATE BY IC	MB1 BS	W	04LICB57	N/A	09/29/04	09/29/04
PHOSPHATE BY IC	MB1	W	04LICB57	N/A	09/29/04	09/29/04
PHOSPHATE BY IC	MB1 BS	W	04LICB57	N/A	09/29/04	09/29/04
SULFATE BY IC	MB1	W	04LICC57	N/A	09/29/04	09/29/04
SULFATE BY IC	MB1 BS	W	04LICC57	N/A	09/29/04	09/29/04
NITRATE NITRITE	MB1	W	04LN3059	N/A	10/14/04	10/14/04
NITRATE NITRITE	MB1 BS	W	04LN3059	N/A	10/14/04	10/14/04
TOTAL DISSOLVED SOLI	MB1	W	04LSS183	N/A	09/22/04	09/22/04
TOTAL DISSOLVED SOLI	MB1 BS	W	04LSS183	N/A	09/22/04	09/22/04
TOTAL DISSOLVED SOLI	MB1 BSD	W	04LSS183	N/A	09/22/04	09/22/04
TOTAL ORGANIC HALIDE	MB1	W	04LX018	N/A	09/21/04	09/21/04
TOTAL ORGANIC HALIDE	MB1 BS	W	04LX018	N/A	09/21/04	09/21/04
TOTAL ORGANIC HALIDE	MB1	W	04LX019	N/A	09/27/04	09/27/04
TOTAL ORGANIC HALIDE	MB1 BS	W	04LX019	N/A	09/27/04	09/27/04




Analytical Report

Client: TNU-HANFORD B03-018 H2724
LVL#: 0409L677

W.O.#: 11343-606-001-9999-00
Date Received: 9-18-04

INORGANIC NARRATIVE

1. This narrative covers the analyses of 6 water samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met with the exception of Nitrate Nitrite that were analyzed past hold due to an analyst's oversight.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Alkalinity and Total Dissolved Solids (TDS) were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite and Total Organic Halides (TOX) were within the 75-125% control limits.
8. The replicate analyses for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite, Alkalinity and TDS were within the 20% RPD control limit, however replicate analysis for TOX was outside the control limit that may be attributed to sample inhomogeneity.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

njpl09-677

10/25/04
Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 33 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
Acidity	305.1		
<input checked="" type="checkbox"/> Alkalinity <input type="checkbox"/> Bicarbonate <input type="checkbox"/> Carbonate	<input checked="" type="checkbox"/> 310.1		
BOD	405.1		5210B (b)
Ion Chromatography:			
<input checked="" type="checkbox"/> Bromide <input checked="" type="checkbox"/> Chloride <input checked="" type="checkbox"/> Fluoride	<input checked="" type="checkbox"/> 300.0	9056	
<input checked="" type="checkbox"/> Nitrate <input checked="" type="checkbox"/> Nitrite <input checked="" type="checkbox"/> Phosphate	<input checked="" type="checkbox"/> 300.0	9056	
<input checked="" type="checkbox"/> Sulfate <input type="checkbox"/> Formate <input type="checkbox"/> Acetate <input type="checkbox"/> Oxalate	<input checked="" type="checkbox"/> 300.0	9056	
Chloride	325.2	9251	
Chlorine, Residual	330.5 (mod)		
Cyanide, Amenable to Chlorination	335.2	9010B	
Cyanide, Total	335.2	9010B	9014 ILMO4.0 (e)
Cyanide, Weak Acid Dissociable			412 (a) 4500CN-I (b)
COD	410.4(mod)		5220C (b)
Color	110.2		
Corrosivity by Coupon		1110(mod)	
Chromium VI		7196A	3500Cr-D (b)
Fluoride	340.2		4500-FC
Hardness, Calcium	215.2		
Hardness, Total	130.2		
Iodide			ASTM D19P202 (1)
Surfactant	425.1		
<input checked="" type="checkbox"/> Nitrate-Nitrite <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite	<input checked="" type="checkbox"/> 353.2		
Ammonia	350.3		
Total <input type="checkbox"/> Kjeldahl <input type="checkbox"/> Organic Nitrogen	351.3		
Total <input type="checkbox"/> Organic <input type="checkbox"/> Inorganic Carbon	415.1	9060	
Oil & Grease	413.1	9070	
<input type="checkbox"/> pH <input type="checkbox"/> pH; paper	150.1	9040B 9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1	420.2 9065 9066	
<input type="checkbox"/> Ortho <input type="checkbox"/> Total Phosphate	365.2		4500-P B C
Salinity			210A (a) 2520 (b)
Settleable Solids	160.5		
Sulfide	376.1	9030B/9034 (acid soluble)	
Reactive <input type="checkbox"/> Cyanide <input type="checkbox"/> Sulfide		Section 7.3 (9014_9030B)	
Silica	370.1		
Sulfite	377.1		
Sulfate	375.4	9038	
Specific Conductance	120.1	9050A	
Specific Gravity			D5057-90 213E (a)
Synthetic Precipitation Leach		1312	
Total <input checked="" type="checkbox"/> Dissolved <input type="checkbox"/> Suspended <input type="checkbox"/> Solids	160 <input checked="" type="checkbox"/> .1 <input type="checkbox"/> .2 <input type="checkbox"/> .3	9020B	
Total Organic Halides	450.1		
Turbidity	180.1		
Volatile Solids:			
<input type="checkbox"/> Total <input type="checkbox"/> Dissolved <input type="checkbox"/> Suspended	160.4		
Other:		Method:	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	B1B3V0	Alkalinity	130	MG/L	2.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	23.1	MG/L	0.25	10.0
		Fluoride by IC	0.29	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	66.8	MG/L	0.25	10.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	36.0	MG/L	0.25	10.0
		Nitrate Nitrite	15.8	MG/L	1.0	50.0
		Total Dissolved Solids	330	MG/L	5.00	1.0
		Total Organic Halides	5.2 u	UG/L	5.2	1.0
-004	B1B3V2	Alkalinity	121	MG/L	2.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	22.3	MG/L	0.25	10.0
		Fluoride by IC	0.34	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	65.0	MG/L	0.25	10.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	33.7	MG/L	0.25	10.0
		Nitrate Nitrite	15.3	MG/L	1.0	50.0
		Total Dissolved Solids	331	MG/L	5.00	1.0
		Total Organic Halides	5.2 u	UG/L	5.2	1.0
-006	B1B3V4	Alkalinity	126	MG/L	2.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	17.4	MG/L	0.25	10.0
		Fluoride by IC	0.30	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	72.4	MG/L	0.25	10.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	37.4	MG/L	0.25	10.0
		Nitrate Nitrite	16.8	MG/L	1.0	50.0
		Total Dissolved Solids	355	MG/L	5.00	1.0
		Total Organic Halides	6.7	UG/L	5.2	1.0
-008	B1B3V6	Alkalinity	1.0 u	MG/L	1.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-008	B1B3V6	Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
		Nitrate Nitrite	0.020u	MG/L	0.020	1.0
		Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
		Total Organic Halides	5.2 u	UG/L	5.2	1.0
-010	B1B3T6	Alkalinity	121	MG/L	2.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	24.1	MG/L	0.25	10.0
		Fluoride by IC	0.26	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	116	MG/L	0.25	50.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	34.5	MG/L	0.25	10.0
		Nitrate Nitrite	26.8	MG/L	1.0	50.0
		Total Dissolved Solids	392	MG/L	5.00	1.0
		Total Organic Halides	5.2 u	UG/L	5.2	1.0
-015	B1B3T8	Alkalinity	137	MG/L	2.0	1.0
		Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	15.7	MG/L	0.25	5.0
		Fluoride by IC	0.28	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	21.3	MG/L	0.25	5.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	29.2	MG/L	0.25	5.0
		Nitrate Nitrite	4.9	MG/L	0.20	10.0
		Total Dissolved Solids	262	MG/L	5.00	1.0
		Total Organic Halides	5.2 u	UG/L	5.2	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/15/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK-ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	04LAKB31-MB1	Alkalinity	0.50 u	MG/L	0.50	1.0
BLANK10	04LICB57-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LICA57-MB1	Chloride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LIC057-MB1	Fluoride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LIC57-MB1	Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LN3059-MB1	Nitrate Nitrite	0.020u	MG/L	0.020	1.0
BLANK10	04LSS183-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK1	04LX018-MB1	Total Organic Halides	5.2 u	UG/L	5.2	1.0
BLANK1	04LX019-MB1	Total Organic Halides	5.2 u	UG/L	5.2	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L677

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-002	B1B3V0	Bromide by IC	10.4	0.00	10.0	103.6	2.0
		Chloride by IC	275	23.1	250	100.6	50.0
		Fluoride by IC	10.6	0.29	10.0	102.9	2.0
		Nitrite by IC	10.5	0.25u	10.0	104.6	2.0
		Nitrate by IC	319	66.8	250	101.1	50.0
		Phosphate by IC	10.2	0.25u	10.0	101.8	2.0
		Sulfate by IC	306	36.0	250	107.8	50.0
		Nitrate Nitrite	58.3	15.8	50.0	85.0	100
-008	B1B3V6	Total Organic Halides	51.0	0.0	50.0	102.1	1.0
BLANK10	04LAKB31-MB1	Alkalinity	97.7	0.50u	100	97.7	1.0
		Alkalinity MSD	99.4	0.50u	100	99.4	1.0
BLANK10	04LICB57-MB1	Bromide by IC	4.8	0.25u	5.0	96.4	1.0
		Nitrite by IC	4.86	0.25u	5.00	97.2	1.0
		Nitrate by IC	4.78	0.25u	5.00	95.6	1.0
		Phosphate by IC	4.7	0.25u	5.0	94.8	1.0
BLANK10	04LICA57-MB1	Chloride by IC	4.7	0.25u	5.0	94.4	1.0
BLANK10	04LIC057-MB1	Fluoride by IC	4.7	0.25u	5.0	94.4	1.0
BLANK10	04LIC57-MB1	Sulfate by IC	4.8	0.25u	5.0	96.2	1.0
BLANK10	04LN3059-MB1	Nitrate Nitrite	0.48	0.02u	0.50	96.2	1.0
BLANK10	04LSS183-MB1	Total Dissolved Solids	105	5.00u	100	105.0	1.0
		Total Dissolved Solids	105	5.00u	100	105.0	1.0
BLANK1	04LX018-MB1	Total Organic Halides	49.9	5.2 u	50.0	99.8	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L677

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
BLANK1	04LX019-MB1	Total Organic Halides	48.4	5.2 u	50.0	96.8	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724

LVL LOT #: 0409L677

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		
			%RECOV	%RECOV	%DIFF
=====	=====	=====	=====	=====	=====
BLANK10	04LAKB31-MB1	Alkalinity	97.7	99.4	1.6
BLANK10	04LSS183-MB1	Total Dissolved Solids	105.0	105.0	0.00

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/15/04

CLIENT: TNUHANFORD B03-018 H2724
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L677

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-002REP	B1B3V0	Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	23.1	22.0	4.9	10.0
		Fluoride by IC	0.29	0.34	17.0	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	66.8	64.6	3.3	10.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	36.0	33.6	6.9	10.0
		Nitrate Nitrite	15.8	15.0	5.2	50.0
-006REP	B1B3V4	Total Organic Halides	6.7	5.2 u	NC 32.2	1.0
-015REP	B1B3T8	Alkalinity	137	139	1.6	1.0
		Total Dissolved Solids	262	277	5.6	1.0

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

0409L 677

Client TNU HANFORD SAF# ~~B04-002~~ B03-018

Est. Final Proj. Sampling Date _____

Project # 11343-606-001-9999-00

Project Contact/Phone # _____

Lionville Laboratory Project Manager OSQC Spec Del Std TAT 30 DaysDate Rec'd 9/18/04 Date Due 10/18/04

Refrigerator #

#/Type Container

Volume

Preservatives

ANALYSES
REQUESTED

ORGANIC

VOA

BNA

Pest/
PCB

Herb

Lionville Laboratory Use Only

MATRIX
CODES:

S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum
Solids
DL - Drum
Liquids
L - EP/TCLP
Leachate
WI - Wipe
X - Other
F - Fish

Lab
ID

Client ID/Description

Matrix
QC
Chosen
(✓)

MS

MSD

Matrix

Date
CollectedTime
Collected

ME00

ME050

ME010

IC0

IALL

IN3NA

ITDS

ITOX

001 B1B3T9 (F)

002 V0

003 V1 (F)

004 V2

005 V3 (F)

006 V4

007 V5 (F)

008 V6

009 T5 (F)

010 T6

DATE/REVISIONS:

Special Instructions: Run matrix QC10/4/04 1. Per client/PM, SAF# = B03-018

ME0 = As, Ba, Cr, Pb, Se, Sn, V, Zn

IC0 = Cl, FL, Br, NO₂, NO₃, SO₄, PO₄

Lionville Laboratory Use Only

Samples were:

1) Shipped _____ or
Hand Delivered _____
Airbill # _____

2) Ambient or Chilled
3) Received in Good
Condition _____
4) Samples Properly Preserved

5) Received Within
Holding Times

Y or N
Y or N

Y or N
Y or N

Y or N
Y or N

Y or N
Y or N

Tamper Resistant Seal was:

1) Present on Outer
Package Y or N

2) Unbroken on Outer
Package Y or N

3) Present on Sample
Y or N

4) Unbroken on
Sample Y or N

COC Record Present
Upon Sample Rec't

Y or N
Y or N

Cooler
Temp. _____ °C

Relinquished
byReceived
by

Date

Time

Relinquished
byReceived
by

Date

Time

"COMPOSITE

WASTE"

ORIGINAL

REWRITTEN

Discrepancies Between
Samples Labels and
COC Record? Y or N
NOTES:

A-C

D T

F.

4

NIVILLE LA
11

LABORATORY INVESTIGATION

67

10

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # B04-002-2
				Page 1 of 2
Collector DURATEK F.M. HALL		Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056	
SAF No. B04-002		Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title ERDF SEPT 2004		DTS - SAWS H83	Ice Chest No. SML 510 Temp.	
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 2920 9058 2469	
Protocol CERCLA		Priority: 45 Days	Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T9 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V0		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V0		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V0		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V0		W			1x20-mL P	Activity Scan	None
B1B3V0		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V0		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V0		W			1x125-mL G/P	Carbon-14	None
B1B3V0		W			4x1000-mL G/P	Iodine-129	None
B1B3V0		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEK F.M. HALL	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 15 2004 1400	Received By FED EX	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9/16/04 3:15 pm	Matrix * S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>[Signature]</i>			Date/Time 9/16/04 10:25	Received By <i>[Signature]</i>			Date/Time 9/17/04 3:00 pm	
Relinquished By <i>[Signature]</i>			Date/Time 9/17/04 1115	Received By <i>[Signature]</i>			Date/Time 9/18/04 1115	
Relinquished By <i>[Signature]</i>			Date/Time 9/18/04 1115	Received By <i>[Signature]</i>			Date/Time 9/18/04 1115	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time	

SDA # H2724

C.O.C. #

B04-002-2

Page 2 of 2

SAF No.
B04-002

Contact/Requestor	Dot Stewart
-------------------	-------------

Telephone No.
509-376-5056

MSIN**FAX**[illegible]

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *	
Relinquished By	DURATEK F. M. HALL	<i>[Signature]</i>	SEP 15 2004	Received By				S = Soil	DS = Drum Solid
Relinquished By				Received By	Fred Sarao			SE = Sediment	DL = Drum Liquid
Relinquished By	Fred Ex		9/16/04 10:25	Received By	<i>[Signature]</i>		9/16/04 3:15 pm	SO = Solid	T = Tissue
Relinquished By				Received By				SL = Sludge	WL = Wine
Relinquished By	<i>[Signature]</i>		9/17/04 3:00	Received By	Fred Ex		9/17/04	W = Water	L = Liquid
Relinquished By				Received By				O = Oil	V = Vegetation
Relinquished By	Fred Ex		9/18/04 1115	Received By	<i>[Signature]</i>		9-18-04 1115	A = Air	X = Other
Relinquished By				Received By					
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time	

PNNL SDG # H2724	<h2 style="margin:0;">CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</h2>	C.O.C. # <div style="border: 1px solid black; padding: 5px; text-align: center; font-weight: bold;">B04-002-3</div>
		Page 1 of 2

Collector DURATEX F.M. HALL	Contact/Requester Dot Stewart Sampling Origin HARTFORD SITE	Telephone No. 509-376-5056 Purchase Order/Charge Code Ice Chest No. SML 510 Temp. Bill of Lading/Air Bill No. 792090582469 Offsite Property No.
SAF No. B04-002 Project Title ERDE SEPT 2004 Shipped To (Lab) TMA/RECRA Protocol CERCLA	Method of Shipment Govt Truck Priority: 45 Days	

POSSIBLE SAMPLE HAZARDS/REMARKS 	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V1 (F)		W	9-15-04	1102	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V2		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V2		W			1x200-mL G/P	Alkalinity - 310.1	Cool 4C
B1B3V2		W			1x300-mL G/P	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V2		W			1x20-mL P	Activity Scan	None
B1B3V2		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V2		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V2		W			1x125-mL G/P	Carbon-14	None
B1B3V2		W			4x1000-mL G/P	Iodine-129	None
B1B3V2		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By DURATEX F.M. HALL	Print <i>[Signature]</i>	Date/Time 1400 SEP 15 2004	Received By Print FREDERICK	Sign <i>[Signature]</i>	Date/Time
Relinquished By	<i>Fred Ex</i>	9/16/04 10:25	Received By	<i>Fred Sarav</i>	9/16/04 3:15
Relinquished By	<i>Fred Sarav</i>	9/17/04 3:00	Received By	<i>Fred Ex</i>	9/17/04
Relinquished By	<i>Fred Ex</i>	9-18-04 1115	Received By	<i>V. Hernandez</i>	9-18-04 1115

- Matrix ***
- | | |
|---------------|------------------|
| S = Soil | DS = Drum Solid |
| SE = Sediment | DL = Drum Liquid |
| SO = Solid | T = Tissue |
| SL = Sludge | WI = Wine |
| W = Water | L = Liquid |
| O = Oil | V = Vegetation |
| A = Air | X = Other |

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By Date/Time
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[illegible]

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liquid
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

PNNL SID# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					C.O.C. # B04-002-4	
Collector R.T. SICKLE		Contact/Requester Dot Stewart			Telephone No. 509-376-5056			MSIN FAX
SAF No. B04-002		Sampling Origin <i>Hanford Site</i>			Purchase Order/Charge Code			
Project Title ERDF SEPT 2004		DTs - Saws - 184			Ice Chest No. <i>SMK 226</i>			Temp.
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck			Bill of Lading/Air Bill No. <i>7920 9058 2491</i>			
Protocol CERCLA		Priority: 45 Days			Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS				Hold Time
				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V3 (F)		W	9-15-04	0914	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V4		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V4		W			1x200-mL G/P <i>CE 9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V4		W			1x200-mL G/P <i>CE 9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V4		W			1x20-mL P	Activity Scan	None
B1B3V4		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V4		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V4		W			1x125-mL G/P	Carbon-14	None
B1B3V4		W			4x1000-mL G/P	Iodine-129	None
B1B3V4		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE <i>[Signature]</i>		Date/Time SEP 15 2004		Received By Fal Ex		Date/Time		Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge W = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By Fred Ex		Date/Time 9/16/04 10:25		Received By Fred Sarao		Date/Time 9/16/04 2:15			
Relinquished By Fred Sarao		Date/Time 9/17/04 3:00		Received By Fred Ex		Date/Time 9/17/04			
Relinquished By Fred Ex		Date/Time 9-18-04 1005		Received By J. V. Hernandez		Date/Time 9-18-04 1005			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

PNNL SDA# H2724	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# B04-002-4
		Page 2 of 2

B04-002-4

Page 2 of 2

FAX[illegible]

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Signature <i>[Signature]</i>	Date/Time 1400	Received By <i>Fed Ex</i>	Print <i>[Signature]</i>	Signature <i>[Signature]</i>	Date/Time SEP 15 2004	Matrix *	
Relinquished By <i>Fed Ex</i>	Date/Time 9/16/04	10:25	Received By <i>Fred Sarao</i>	Date/Time 9/16/04	4:15			S = Soil	DS = Drum Solid
Relinquished By <i>Fred Sarao</i>	Date/Time 9/17/04	3:00 pm	Received By <i>Fed Ex</i>	Date/Time 9/17/04				SE = Sediment	DI = Drum Liquid
Relinquished By <i>Fed Ex</i>	Date/Time 9-18-04	1005	Received By <i>O'Hernan</i>	Date/Time 9-18-04	1005			SO = Solid	T = Tissue
Relinquished By <i>Fed Ex</i>	Date/Time 9-18-04	1005	Received By <i>Fed Ex</i>	Date/Time 9-18-04	1005			SL = Sludge	WI = Wine
Relinquished By <i>Fed Ex</i>	Date/Time 9-18-04	1005	Received By <i>Fed Ex</i>	Date/Time 9-18-04	1005			W = Water	L = Liquid
Relinquished By <i>Fed Ex</i>	Date/Time 9-18-04	1005	Received By <i>Fed Ex</i>	Date/Time 9-18-04	1005			O = Oil	V = Vegetation
Relinquished By <i>Fed Ex</i>	Date/Time 9-18-04	1005	Received By <i>Fed Ex</i>	Date/Time 9-18-04	1005			A = Air	X = Other
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By <i>[Signature]</i>		
						Date/Time			

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-5	
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. MSIN FAX 509-376-5056		Page 1 of 2	
SAF No. B04-002		Sampling Origin <i>Hanford Site</i>		Purchase Order/Charge Code			
Project Title ERDE SEPT 2004		DTS - SAMS - 184		Ice Chest No. <i>ERC-99.058</i> Temp.			
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck		Bill of Lading/Air Bill No. <i>7920 0938 2480</i>			
Protocol CERCLA		Priority: 45 Days		Offsite Property No. <i>PTK 14126</i>			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS		Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3V5 (F)		W	<i>9-15-04</i>	<i>0800</i>	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3V6		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3V6		W			<i>1x200-mL G/P</i> <i>9-15-04</i>	Alkalinity - 310.1	Cool 4C
B1B3V6		W			<i>1x500-mL G/P</i> <i>300 9-15-04</i>	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3V6		W			1x20-mL P	Activity Scan	None
B1B3V6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3V6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3V6		W			1x125-mL G/P	Carbon-14	None
B1B3V6		W			4x1000-mL G/P	Iodine-129	None
B1B3V6		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By <i>R.T. SICKLE</i> <i>SEP 15 2004</i>		Received By <i>Fed Ex</i>		Matrix *	
Relinquished By <i>Fed Ex</i> <i>9/16/04</i> <i>10:25</i>		Received By <i>Fred Sarao</i> <i>9/16/04</i> <i>3:45</i>		S = Soil DS = Drum Solid SE = Sediment DI = Drum Limb SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By <i>Fred Sarao</i> <i>9/17/04</i> <i>3:00 pm</i>		Received By <i>Fed Ex</i> <i>9/17/04</i>			
Relinquished By <i>Fed Ex</i> <i>9-18-04</i> <i>1005</i>		Received By <i>V. H. ...</i> <i>9-18-04</i> <i>1005</i>			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By Date/Time	

SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B04-002-5

Page 2 of 2

SAF No.
B04-002

Contact/Requestor	Dot Stewart
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Telephone No.
509-376-5056

MSIN**FAX**[illegible]

Relinquished By

Print

R.T. SICKLE

Date/Time 1403

SEP 15 2004

Received By

Print

Siena

Date/Time

Matrix *

Relinquished By

Date/Time

Received By

Date/Time

Relinquished By

Date/Time

Received By

Date/Time

Relinquished By

Date/Time

Received By

Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # B04-002-6							
Collector R.T. SICKLE		Contact/Requester Dot Stewart		Telephone No. 509-376-5056		MSIN FAX							
SAF No. B04-002		Sampling Origin Hanford Site		Purchase Order/Charge Code		Page 1 of 2							
Project Title ERDE SEPT 2004		Method of Shipment Govt Truck		Ice Chest No. ERC-99-058		Temp.							
Shipped To (Lab) TMA/RECRA		Priority: 45 Days		Bill of Lading/Air Bill No. 7920 0958 2480		Offsite Property No.							
Protocol CERCLA		SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
POSSIBLE SAMPLE HAZARDS/REMARKS													
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative						
B1B3T5 (F)		W	9-15-04	1044	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2						
B1B3T6		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C						
B1B3T6		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2						
B1B3T6		W			1x500-mL P	IC Anions - 300.0	Cool 4C						
B1B3T6		W			1x200-mL G/P 500 9-15-04	Alkalinity - 310.1	Cool 4C						
B1B3T6		W			1x800-mL G/P 500 9-15-04	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C						
B1B3T6		W			1x20-mL P	Activity Scan	None						
B1B3T6		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2						
B1B3T6		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2						
B1B3T6		W			1x125-mL G/P	Carbon-14	None						
B1B3T6		W			4x1000-mL G/P	Iodine-129	None						
B1B3T6		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2						
Relinquished By R.T. SICKLE		Print SEP 15 2004		Date/Time 9/15/04		Received By Fred Ex		Print SEP 15 2004		Date/Time 9/15/04		Matrix *	
Relinquished By Fred Ex		Print 9/16/04		Date/Time 10:25		Received By Fred Ex		Print 9/16/04		Date/Time 3:45		S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air	
Relinquished By Fred Ex		Print 9/17/04		Date/Time 3:00		Received By Fred Ex		Print 9/17/04		Date/Time 1005		DS = Drum Solid DL = Drum Liquid T = Tissue WI = Wine L = Liquid V = Vegetation X = Other	
Relinquished By Fred Ex		Print 9-18-04		Date/Time 1005		Received By Fred Ex		Print 9-18-04		Date/Time 1005			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By				Date/Time			

PNNL SDG# H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					C.O.C. # B04-002-8		12	
							Page 1 of 1			
Collector DORATEK F. M. HALL			Contact/Requester DOT STEWART			Telephone No. 504 376 5056 MSIN FAX				
SAF No. B04-002			Sampling Origin HANFORD SITE			Purchase Order/Charge Code				
Project Title ERDE SEPT 2004			DTS - SHWS H83			Ice Chest No. SMC 510 Temp.				
Shipped To (Lab) TMA/RECRA			Method of Shipment Gov Vehicle			Bill of Lading/Air Bill No. 792090582469				
Protocol CERCLA			Priority: 45 Days			Offsite Property No.				
POSSIBLE SAMPLE HAZARDS/REMARKS					SPECIAL INSTRUCTIONS				Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B440		W	9-15-04	0850	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B440		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By DORATEK F. M. HALL		Print [Signature]	Sign [Signature]	Date/Time SEP 15 2004 4:00	Received By FED Ex	Print [Signature]	Sign [Signature]	Date/Time	Matrix * S - Soil DS - Drum Solid SE - Sediment DI - Drum Liquid SO - Solid T - Tissue SL - Sludge WL - Wine W - Water L - Liquid O - Oil V - Vegetation A - Air X - Other
Relinquished By Fed Ex		Date/Time 9/16/04 10:25	Received By Fred Sarao		Date/Time 9/16/04 3:15 pm				
Relinquished By Fred Sarao		Date/Time 9/17/04 3:03	Received By Fed Ex		Date/Time 9/17/04				
Relinquished By Fed Ex		Date/Time 9-18-04 11:15	Received By [Signature]		Date/Time 9-18-04 11:15				
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)					Disposed By		Date/Time

PNNL SDG-1 H2724		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					C.O.C. # B04-002-10	
							Page 1 of 1	
Collector R.T. SICKLE			Contact/Requester			Telephone No. MSIN FAX		
SAF No. B04-002			Sampling Origin Hanford site			Purchase Order/Charge Code		
Project Title ERDF SEPT 2004			DTS - 54wb - HSY			Ice Chest No. 5111 226 Temp.		
Shipped To (Lab) TMA/RECRA			Method of Shipment			Bill of Lading/Air Bill No. 7920 9058 2491		
Protocol CERCLA			Priority: 45 Days			Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS				
				Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B442		W	9-15-04	0800	3x40-mL aGs*	VOA - 8280A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B442		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By R.T. SICKLE	Print	Sign	Date/Time 9/15/04	Received By	Print	Sign	Date/Time
SEP 15 2004				Fed Ex			
Relinquished By	Date/Time	Received By	Date/Time	Matrix *			
Fed Ex	9/16/04 10:25	Fred Sarao	9/16/04 2:15	S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other			
Relinquished By	Date/Time	Received By	Date/Time				
Fred Sarao	9/17/04 3:00 pm	Fed Ex	9/17/04				
Relinquished By	Date/Time	Received By	Date/Time				
Fed Ex	9-18-04 1005	Fred Sarao	9-18-04 1005				

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

SDG # H2724

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

B04-002-1

Page 1 of 2

Collector R.T. SICKLE		Contact/Requester Dot Stewart	Telephone No. 509-376-5056	MSIN	FAX
SAF No. B04-002		Sampling Origin Hanford site	Purchase Order/Charge Code		
Project Title ERDF SEPT 2004		DTG-SAWS-H84	Ice Chest No. 5mL 558 Temp.		
Shipped To (Lab) TMA/RECRA		Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7927 3263 8185		
Protocol CERCLA		Priority: 45 Days	Offsite Property No.		

POSSIBLE SAMPLE HAZARDS/REMARKS

SPECIAL INSTRUCTIONS

Hold Time

Total Activity Exemption: Yes ☒ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B3T7 (F)		W	9-16-04	0833	1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x500-mL G/P	ICP Metals - 6010TR (Client List)	HNO3 to pH <2
B1B3T8		W			1x500-mL P	IC Anions - 300.0	Cool 4C
B1B3T8		W			1x200-mL G/P 500 mL	Alkalinity - 310.1	Cool 4C
B1B3T8		W			1x200-mL G/P 500 mL	NO2/NO3 - 353.2	H2SO4 to pH <2 Cool 4C
B1B3T8		W			1x20-mL P	Activity Scan	None
B1B3T8		W			2x1000-mL G/P	Gross Alpha	HNO3 to pH <2
B1B3T8		W			2x1000-mL G/P	Gross Beta	HNO3 to pH <2
B1B3T8		W			1x125-mL G/P	Carbon-14	None
B1B3T8		W			4x1000-mL G/P	Iodine-129	None
B1B3T8		W			2x1000-mL G/P	Radium -226	HNO3 to pH <2

Relinquished By R.T. SICKLE	Date/Time SEP 16 2004	Received By Fred Ex	Date/Time 9/17/04 9:10	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By Fred Ex	Date/Time 9/17/04 9:10	Received By Fred Ex	Date/Time 9/17/04 10:35		
Relinquished By Fred Ex	Date/Time 9/17/04 3:22	Received By Fred Ex	Date/Time 9/17/04		
Relinquished By Fred Ex	Date/Time 9-18-04 1005	Received By Fred Ex	Date/Time 9-18-04 1005		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By Fred Ex	Date/Time 9-18-04 1005

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SDGA 142724

C.O.C. #

B04-002-1

Page 2 of 2

SAF No.

B04-002

Contact/Requestor
Dot Stewart

Telephone No.
509-376-5056

MSIN**FAX**[illegible]

Relinquished By R.T. SICKLE	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 1400	Received By Fred Ex	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time	Matrix *	
Relinquished By	Date/Time	SEP 16 2004	Received By	Date/Time			S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By Fred Ex	Date/Time 9/17/04 9:10		Received By Fred Sarao	Date/Time 9/17/04 11:35					
Relinquished By Fred Sarao	Date/Time 9/17/04 3:00		Received By Fred Ex	Date/Time 9/17/04					
Relinquished By Fred Ex	Date/Time 9-18-04 1005		Received By D-X	Date/Time 9-18-04 1005					
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time		

PNNL SDG # 142724	<h2 style="margin:0;">CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</h2>	<div style="text-align: right;"> ⁰⁵ C.O.C. # B04-002-7 </div> <div style="text-align: right; margin-top: 5px;"> Page 1 of 1 </div>
Collector R.T. SICKLE	Contact/Requester Dot Steward	Telephone No. 509 376-5056 MSIN FAX
SAF No. B04-002	Sampling Origin Hanford site	Purchase Order/Charge Code
Project Title ERDE SEPT 2004	DTS-SAW-1-HPY	Ice Chest No. 5ML 550 Temp.
Shipped To (Lab) TMA/RECRA Protocol CERCLA	Method of Shipment Govt Truck	Bill of Lading/Air Bill No. 7927 3263 8185
Priority: 45 Days		Offsite Property No.
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1B439		W	9-16-04	0730	3x40-mL aGs*	VOA - 8260A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B1B439		W	1	6	1x20-mL P	Activity Scan	None

Relinquished By R.T. SICKLE Sign <i>[Signature]</i> Date/Time SEP 16 2004	Received By Fred Ex Print Fred Ex Sign <i>[Signature]</i> Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By Fred Ex Sign <i>[Signature]</i> Date/Time 9/17/04 9:10	Received By Fred Sarao Sign <i>[Signature]</i> Date/Time 9/17/04 12:35 AM			
Relinquished By Fred Sarao Sign <i>[Signature]</i> Date/Time 9/17/04 3:00	Received By Fred Ex Sign <i>[Signature]</i> Date/Time 9/17/04			
Relinquished By Fred Ex Sign <i>[Signature]</i> Date/Time 9-18-04 1005	Received By V-Henry Sign <i>[Signature]</i> Date/Time 9-18-04 1005			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 9-18-04

Purchase Order / Project# /

(SAF#) SOW# / Release #: B04-002

LvLI Batch #:

0409677

Sample Custodian:

V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|---|----------|
| 1. Samples Hand Delivered or <u>(Shipped)</u> | Carrier <u>fed Ex</u> | Airbill# <u>790276492076</u>
<u>1 2102</u> | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp <u>2.5</u>
<u>2.4</u> °C | Cooler # <u>SML510</u>
<u>ERC 99058</u> | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <u>IC ANIONS - NO₂, NO₃, PO₄</u> | |
| 13. VOA, TOC <u>TOX</u> free of headspace? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A <u>Head space</u> | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <u>See # 12, # 13</u> | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |